

NOVEMBER

(NOVEMBER-DECEMBER)

1945

CHEMICAL PREVIEW

NEW

- ★ PROCESSES
- ★ MATERIALS
- ★ MACHINERY
- ★ PRODUCTS
- ★ APPLICATIONS



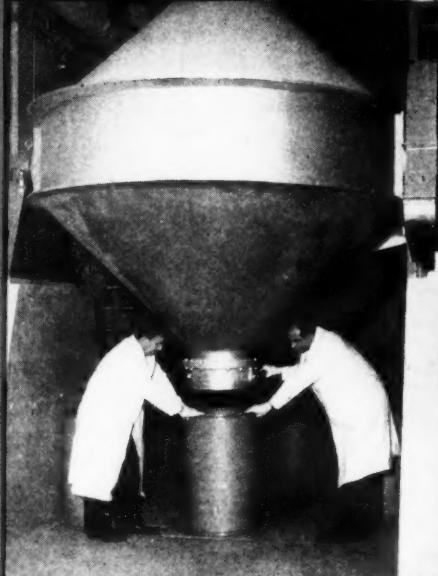
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Titrometer tells free, combined acidity in aqueous, non-aqueous, colored, opaque solutions. For lubricating, vegetable oils and water solutions



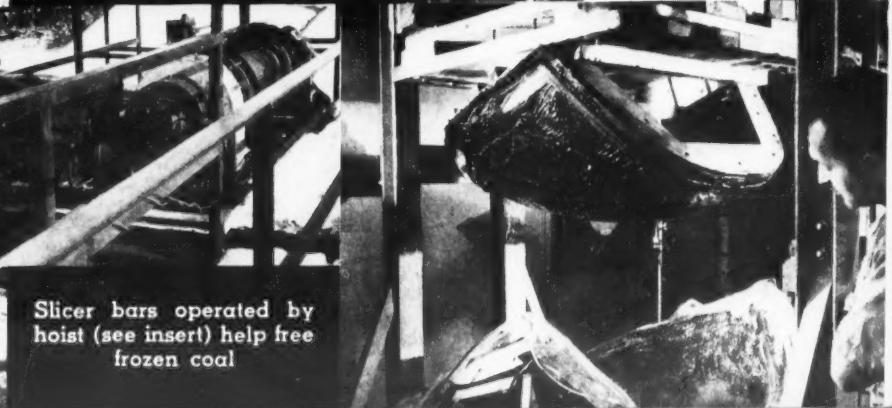
Double cone stainless steel blander used to make gelatin has dry blending capacity of 152 cu. ft.

Self-contained breathing unit delivers fresh air — not oxygen; no chemicals used. Many applications such as in tank cars, valve and pump rooms

Wooden molds coated with felt over which is applied coating of special lubricant form products made of "Lucite" methyl methacrylate resin



Slicer bars operated by hoist (see insert) help free frozen coal



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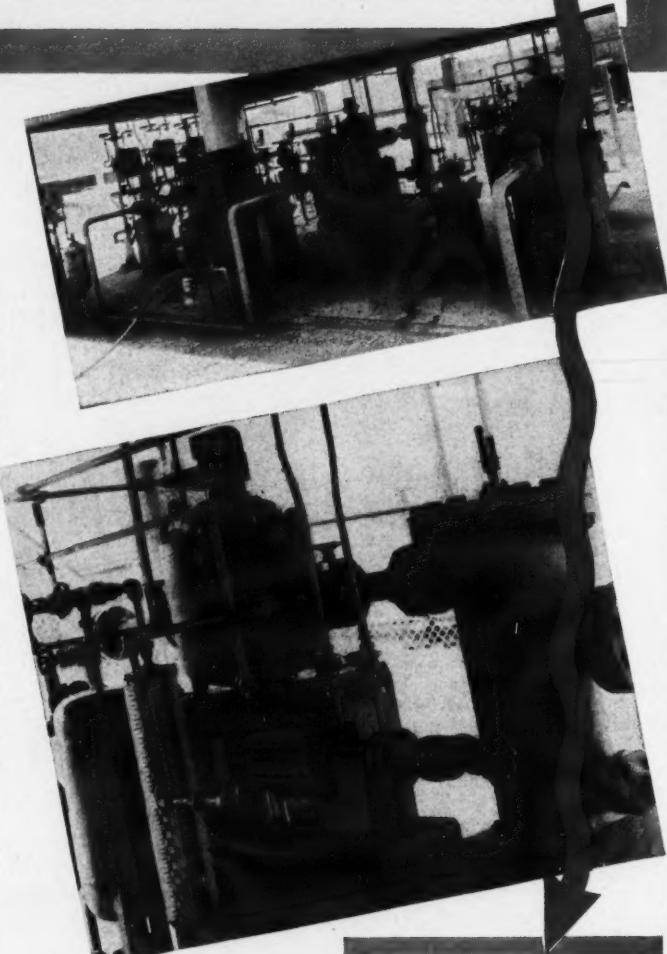
Automatic Sampling protects the purchaser of bulk shipments and assures him that the product received is up to specification standards. Diluence and foreign solvents are immediately detected by means of a single composite sample which may be readily varied in size from one barrel a day to five gallons a week. Equipment is fully flow responsive and meters main flow accurately. Several hundred %Proportioneers% sampling machines are now in use checking shipments of solvents, gasolines, food products oils, process chemicals, effluents, etc.

There are other %Proportioneers% processing systems for Treating, Blending and Diluting.

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Streamline
PROCESSING PAYS

"That's Interesting"

New Research Lab Has Air Cleaning, Radiant Heating

An ultra-modern research laboratory nearing completion in Pittsburgh is indicative of present trends. It will be without a single window, utilizing air conditioning and fluorescent lighting and a radiant heating system. Wrought iron pipe is to be installed under asphalt tile flooring, eliminating conventional heating units in the laboratory. Augmenting the air-conditioning system, an air cleaning apparatus will contribute to greater accuracy and testing control. This new laboratory having 12,000 square feet of floor space will house the research facilities of the Heppenstall Co., Pittsburgh.

Palmistry Up-to-Date

A replica of your palm can be made by spraying it with molten alloy metal. It can be done without harm with bismuth alloys some of which are liquid below the boiling point of water. (Ohmite News)

"Thar's Gold in Them Thar Hills"

On the same spot where gold was first discovered in Colorado in 1859 nearly eighty years later a mechanical gold pan was recovering gold at a rate as high as \$10 per hour. The advantages of the hand panning motion in recovering fine and coarse gold prompted its incorporation in a mechanical unit. Over 700 such machines are in use today in the U. S. and foreign countries. These machines duplicate the hand panning motion by means of a steel yoke and saddle connected to an enclosed rotating ball bearing eccentric. Vibrating motion embodies 240 complete oscillations per minute. Power is by small gas engine which also drives pump to handle water. The mechanical gold pan is also being used in treatment of mine dumps, recovering values from old mill tailings, etc. One of the most interesting features is that the unit makes an ideal amalgamator. (Denver Equipment Co., Denver 17, Colo.)

Cooking With High Test
Aviation Gasoline

High-test gasoline wasn't meant for cooking but its use in a Coleman Military Stove was made possible by a small tightly coiled filter made from an 8" strip of Monel wire cloth $\frac{5}{8}$ " wide. The cloth — 110 mesh is woven of .003" diameter wire by John Roebling Sons, Co., Trenton, N. J. from Driver-Harris Co. wire. The filter fits into the vaporizing tube and around the needle which regulates the flow of gasoline, resisting attack by tetra ethyl lead and high octane gasoline. (Driver-Harris Alloy Craftsman, Driver-Harris-Co., Harrison, N. J.)

Large O.D. Welded Mechanical
Tubing for Portable Irrigation

Ordinarily the production of welded mechanical tubing ends at the 4 $\frac{1}{2}$ inch size but a plant recently opened and provided with newest equipment furnishes standard sizes to 6 $\frac{1}{2}$ inch O.D. walls from .028 to .250 inch. Irrigation tubing is among the most important uses of this large diameter type. (U.S. Tube Corp., Cleveland)

(Continued on page 5)

For more information on product at left, specify CP A2963
see information request blank between pages 2-3.

Check Below For Product Information

EVERY PRODUCT DESCRIBED IN THIS ISSUE IS LISTED ON THIS SHEET. Check items that interest you, fill in your name and address on reverse side and mail to publisher. Information comes to you direct, without obligation.

NOVEMBER-DECEMBER, 1945

✓ Key	Product	✓ Key	Product	✓ Key	Product	✓ Key	Product
<input type="checkbox"/> A2963	Proportioning Pumps	<input type="checkbox"/> A3026	Laboratory Ovens	<input type="checkbox"/> A3088	Lift Trucks	<input type="checkbox"/> A3152	Protective Dip Coating
<input type="checkbox"/> A2964	Processing Equipment	<input type="checkbox"/> A3027	Flow Controllers	<input type="checkbox"/> A3089	Open Steel Flooring	<input type="checkbox"/> A3153	Metal Spinning
<input type="checkbox"/> A2965	Glass-lined Pipe & Fittings	<input type="checkbox"/> A3028	Solenoid Valves	<input type="checkbox"/> A3090	Trioxane	<input type="checkbox"/> A3154	Filter Fabrics
<input type="checkbox"/> A2966	Clamp Gate Valves	<input type="checkbox"/> A3029	Electronic Counters	<input type="checkbox"/> A3091	Thermoset Plastic	<input type="checkbox"/> A3155	Wax Fortified Paints
<input type="checkbox"/> A2967	Conveyors	<input type="checkbox"/> A3030	Tachometers	<input type="checkbox"/> A3092	Chemicals	<input type="checkbox"/> A3156	Pump Inventory Kit
<input type="checkbox"/> A2968	Electrical-Resistance Thermometers	<input type="checkbox"/> A3031	Gauges	<input type="checkbox"/> A3093	Dewatering Press	<input type="checkbox"/> A3157	Branch Pipe Outlets
<input type="checkbox"/> A2969	Chemical Porcelain	<input type="checkbox"/> A3032a	Vacuum Pumps	<input type="checkbox"/> A3094	Water Main Compound	<input type="checkbox"/> A3158	Non-corrosive Dip for Zinc
<input type="checkbox"/> A2970	Overhead Handling	<input type="checkbox"/> A3032b	Vacuum Gauges	<input type="checkbox"/> A3095	Chemicals	<input type="checkbox"/> A3159	Lead Plating Concentrates
<input type="checkbox"/> A2971	"Air-Pak" Breathing Unit	<input type="checkbox"/> A3033	Optical Pyrometer	<input type="checkbox"/> A3096	Adhesives	<input type="checkbox"/> A3160	Fire Extinguishers
<input type="checkbox"/> A2972	Fork Trucks	<input type="checkbox"/> A3034	Diaphragm Valves	<input type="checkbox"/> A3097	Protective Creams	<input type="checkbox"/> A3161	Shallow Wells Pumps
<input type="checkbox"/> A2973	Corrosion Data	<input type="checkbox"/> A3035	Power Units	<input type="checkbox"/> A3098	Fire-repellent Paint	<input type="checkbox"/> A3162	Welding, Soldering Fluxes
<input type="checkbox"/> A2974	Endless Belts	<input type="checkbox"/> A3036	Temperature Controls	<input type="checkbox"/> A3099	Pipe Reamers	<input type="checkbox"/> A3163	Ball Bearing Tester
<input type="checkbox"/> A2975	Feed Systems	<input type="checkbox"/> A3037	Sand Rammer	<input type="checkbox"/> A3100	"Niathal"	<input type="checkbox"/> A3164	Truck Type Tray Dryers
<input type="checkbox"/> A2976	Acid Tank Skimmer	<input type="checkbox"/> A3038	Recording Thermometers	<input type="checkbox"/> A3101	Silica Products	<input type="checkbox"/> A3165	Magnetic Separators
<input type="checkbox"/> A2977	Mixers	<input type="checkbox"/> A3039	Compressed Air Dryers	<input type="checkbox"/> A3102a	Carbonic Gas	<input type="checkbox"/> A3166	Gate Valves
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<input type="checkbox"/> A2982	Metalizing Equipment	<input type="checkbox"/> A3044	Metal Detector	<input type="checkbox"/> A3106	Dimethyl Sebacate	<input type="checkbox"/> A3171	Filters
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<input type="checkbox"/> A3003	Laboratory Furnaces	<input type="checkbox"/> A3066	Laboratory Glassware	<input type="checkbox"/> A3128	Cotton Filter Medium	<input type="checkbox"/> A3192	Ball-bearing Swivels
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<input type="checkbox"/> A3019	Pneumatic Transmitter	<input type="checkbox"/> A3082	Corrosion Resistant	<input type="checkbox"/> A3144	Spout Type Magnets	<input type="checkbox"/> A3208	Compressed Air Purifiers
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		<input type="checkbox"/> A3089	Wetting Agents	<input type="checkbox"/> A3151	Fire Extinguishers	<input type="checkbox"/> A3215	Liquid Vibrating Screens

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<input type="checkbox"/> A3250b	Hand Winches	<input type="checkbox"/> A3299	Pump Cup Packing	<input type="checkbox"/> A3350	Oven Furnaces	<input type="checkbox"/> A3402	Magnetic Separators
<input type="checkbox"/> A3250c	Gates	<input type="checkbox"/> A3300	Vertical Motors	<input type="checkbox"/> A3351	Composite Tool Steel	<input type="checkbox"/> A3403	Plastic Pipe & Fittings
<input type="checkbox"/> A3251	Belt Idlers	<input type="checkbox"/> A3301	Small Twin-Unit Filters	<input type="checkbox"/> A3352	Paint Removers	<input type="checkbox"/> A3404	Tube Cleaners
<input type="checkbox"/> A3252	Exposition of Chemical Industries	<input type="checkbox"/> A3302	Processing Equipment	<input type="checkbox"/> A3353	Propellair Fans	<input type="checkbox"/> A3405	Nozzles
<input type="checkbox"/> A3253	Heating Jackets	<input type="checkbox"/> A3303	Steel & Alloy Equipment	<input type="checkbox"/> A3354	Oil Burner Systems	<input type="checkbox"/> A3406	Slurry Pumps
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				<input type="checkbox"/> A3365	Centrifugal Air Separators		

Your Name Your Title (Please give the firm name)
 Your Firm
 Your Street Address
 Your City and State (Please Give Postal Zone Number)

Fill in and mail this form to **CHEMICAL PREVIEW**, 737 N. Michigan Ave., Chicago 11, Illinois



Accurate determination of free and combined acidity of material in aqueous or non-aqueous highly colored or opaque solutions is easily secured with titrometer (shown in top illustration) embodying two complete titration stands. Developed for use in connection with lubricating oils, it is applicable to other materials such as vegetable oils, fats, rubber, common solvents and other water solutions. See page 16.

The extra large double cone blower for blending of dry powders, crystals and materials in similar formation has a diameter of 8 feet. The smooth interior of stainless steel, 20% clad permits rapid cleaning and prevents contamination. The unit is equipped with magnetic starter, push button station and has self-aligning ball bearing pillow blocks mounted on structural steel stands. See page 113.

Fresh cool air dependable protection and the convenience of a light weight, easily worn pack is provided by the breathing apparatus pictured (right center). The fresh, cool air delivered from the compressed air cylinder and the design of the full vision face set eliminate fogging of lenses. Also, no oxygen or air lines need be carried when working in such areas as in tanks, etc. The "Air-pak" is donned in a moment and ready for instant use at all times. See page 6.

Frozen coal in hopper cars presents a tough problem which the hoist and slicer bar combination pictured (lower left) handles effectively. This special hoist does away with manual labor involved in use of crowbars, sledges, shovels, etc., by providing easy, precise operation of slicer bars. See page 97.

The use of wooden molds, coated with felt lubricated by special forming lubricants, as shown in the illustration at the lower right is one of the interesting developments to come from urgent requirements imposed by war. The method pictured here and other new forming techniques overcome distortion. Forming lubricants possessing special properties play a vital part in the success of these advanced methods. See page 36.



How To Use This Issue

If you are particularly interested in a specific type of product, turn first to the Directory of All Products in This Issue on pgs. 115, 116. Here is an alphabetical listing of every product, whether it is featured editorially or in the advertising.

Then, to make sure you keep abreast of latest developments, perhaps something you have heard nothing about, you'll want to browse through the rest of the pages.

The Editors have searched far and wide to bring you this comprehensive Preview of product developments of help to you in your chemical processing work. Thus, they save you time, enable you to keep posted with a minimum of effort. When you find an item that interests you particularly, and you'd like more information on it, use the handy information request slip between pages 2 and 3. Just check the item that interests you, fill in your name and address and send this slip to the publishers. The information will come to you promptly.

How To Get This Magazine Regularly

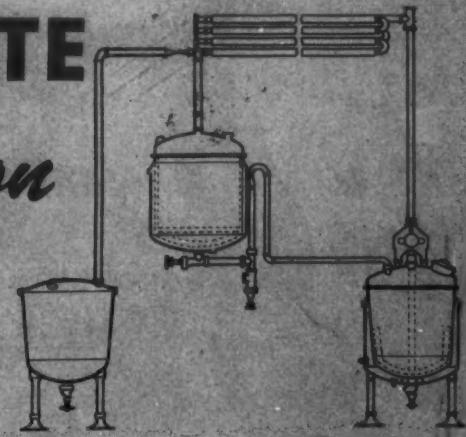
Subscriptions to this magazine are NOT SOLD. Its circulation is restricted to men who are actively engaged, in responsible capacities, in chemical processing plants.

You can receive it free of charge simply by sending your request to the publishers on your company letterhead and telling them of your connection in your chemical processing plant, if you are a chemist, engineer or executive. Your request subscription will start soon thereafter. There is no charge or obligation for this service.

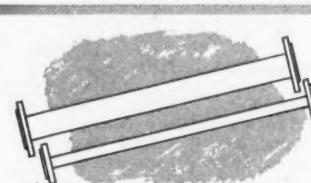
100% COMPLETE

Process Protection

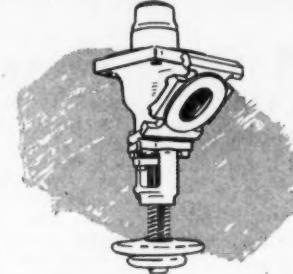
You can eliminate weak "links" in your process layout by the addition of Pfaudler glass-lined pipe, fittings and valves.



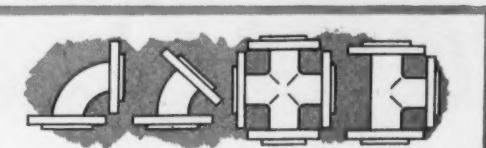
Have you stopped corrosion with glass-lined steel equipment in one stage of processing and overlooked it in another? Others have. How about your pipe lines, fittings and valves? Besides reactors, stills, condensers and storage tanks, Pfaudler makes a complete line of glass-lined pipe, fittings and valves. Some of the highlights of these lines are indicated below . . . and we'll be glad to send more complete information on request.



Flanged glass-lined pipe is available in diameters of 1½" and upward, lined with Pfaudler highly acid resisting glass. Maximum lengths: 1½" size, 36"; all others, 10 ft. Standard pressure, 125 lbs. Heavy duty designs are in successful operation at pressures up to 300 lbs. Jacketed and unjacketed pipe also available as heat exchangers and condensers, connected in series or parallel by 180° glass-lined return bends. The inherent flexibility of the straight pipe return bend design results in a wide selection of heat transfer surfaces.



Pfaudler Heavy-Duty Glass-Lined Valves (flush, safety, and line) are built for rugged service. Limited pressure, 125 P.S.I. All valve bodies are made of cast iron, glass-lined, and are equipped with porcelain valve heads and seats which are free from mechanical and thermal strains. Flush valve openings: 2" to 1½"; 3" to 2"; 4" to 3". Safety and line valves: 1½"; 2", 3".



Flanged glass-lined fittings complete the all-glass-lined assembly . . . keep corrosion under control all the way. Standard 125 P.S.I. fittings include straight and reducing tees, elbows, crosses, reducers, bends, etc. from 1½" to 12". Special fittings are made on request. To obtain maximum service from glass-lined process equipment, it is important to select a proper gasketing material. Gaskets for all glass-lined connections are obtainable from Pfaudler.

Perhaps Pfaudler glass-lined equipment could do a *better job* for you if utilized to fullest advantage. Our engineers will be glad to recommend complete glass-lined process assemblies with which to meet your conditions most economically. We welcome your inquiries and of course will be glad to send you literature. Write The Pfaudler Co., Rochester 4, N. Y.

Pfaudler



THE PFAUDLER CO., ROCHESTER 4, NEW YORK
ENGINEERS AND FABRICATORS OF CORROSION RESISTANT PROCESS EQUIPMENT
Glass-Lined Steel . . . Stainless Steels . . . Nickel . . . Inconel . . . Monel Metal

THE PFAUDLER CO., Rochester 4, New York. Branch Offices: 330 West 42nd St., New York 18, N. Y.; 111 W. Washington St., Chicago 2, Ill.; 1325 Howard St., San Francisco 3, Calif.; 455 Paul Brown Bldg., St. Louis 1, Mo.; 7310 Woodward Ave., Detroit 2, Mich.; 1318 1st Nat'l Bank Bldg., Cincinnati 2, O.; 1041 Commercial Tr. Bldg., Philadelphia 2, Pa.; 751 Little Bldg., Boston 16, Mass.; Box 982, Chattanooga 1, Tenn.

When inquiring specify CP A2965 . . . see information request blank, pgs. 2-3



CRANE Iron Body Clamp Gate Valves

**WORKING PRESSURES: Up to 150
Pounds Saturated Steam; 225 Pounds
Water, Oil, or Gas, Non-Shock.**

In piping services needing frequent cleaning of valves, Crane Wedge Disc Clamp Gates simplify and speed such work. Just loosen their "U"-bolt bonnet joint and the complete bonnet assembly lifts out, including the disc. Replacing it is just as easy.

ALWAYS TIGHT—With these valves, you can afford the time for regular inspection and servicing—and that makes for longer valve life. Repeated opening of the bonnet joint doesn't affect its tightness. Also, Crane design in the seats and disc insures long-lasting tight closure.

ALL-IRON OR BRASS-TRIMMED—Ideal for many services, Crane Clamp Gate Valves come in OS&Y; Inside Screw; and Quick-Opening patterns; screwed or flanged ends. Sizes up to 4 in. See pages 98 and 99 of your Crane Catalog.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

For anything in Piping Materials, Call CRANE!

CRANE
VALVES • FITTINGS • PIPE • PLUMBING • HEATING • PUMPS

When inquiring specify CP A2966 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

Edited for Production and Laboratory
Men in the Chemical Process Industries

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Breweries, Wineries	Food Products	Public Utilities
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Pharmaceuticals	Rayon, etc.	(Carbon, Glue, Oils,
Fertilizers		Tobacco, etc.)

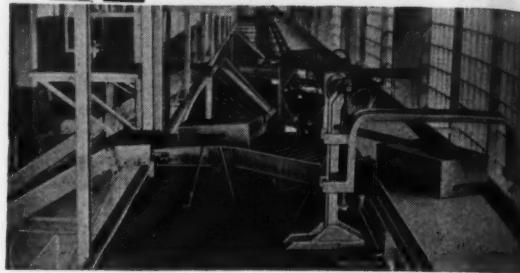
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HERE'S HOW TO SPEED CASES THROUGH YOUR PLANT



SOON—your plant too will be producing "consumer products"—products for which there is a tremendous demand.

Your job, then, will be to produce those products quickly, efficiently and at the lowest possible cost.

Think how a complete A-F Conveyor System "engineered" to your plant's needs will help you speed production through your plant.

Whatever your requirements—a portable stacker or a complete conveyor system, write us.

THE ALVEY-FERGUSON CO.

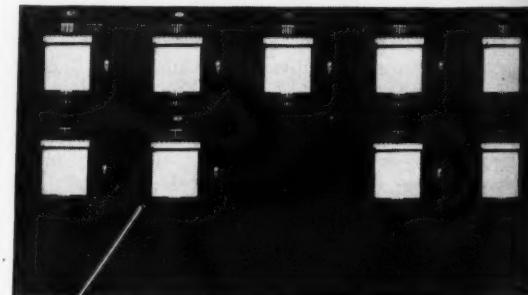
Offices in Principal Cities, 18 Disney St., Cincinnati 9, Ohio

CONVEYING EQUIPMENT

Alvey-Ferguson

METAL PRODUCTS CLEANING & FINISHING EQUIPMENT

When inquiring specify CP A2967 — see information request blank, pgs. 2-3



Add THERMOHM To Your Control Vocabulary

Shifting temperature responsibilities to Thermohms, the L&N Electrical-Resistance Thermometers, used with Micromax Recorders or Controllers, is an improvement many plants can make now. It may even reduce operating costs of present plant machinery! The battery of Micromax Recorders shown above, for example, will enable one man to log temperatures detected by Thermohms at 144 different points in a food storage plant.

Thermohms have already been added to the control vocabularies of many men in refrigeration, ice cream making, air conditioning, and other food and chemical plant operations.

If you want a description of the equipment, please ask for Catalog N-33C, sent on request.



LEEDS & NORTHRUP CO., 4995 STENTON AVE., PHILA. 44, PA.

MEASURING INSTRUMENTS • TELEMETERS • AUTOMATIC CONTROLS • HEAT-TREATING FURNACES

Jrl. Ad N-33C(6a)

When inquiring specify CP A2968 — see information request blank, pgs. 2-3

"That's Interesting"

Modern Apartments Equipped with Frozen Food Locker Facilities

Installation of frozen food lockers in apartment buildings on a large scale is predicted in forthcoming months. Before the war there were comparatively few packers of frozen foods. Today there are considerably more than 800 and new packers are increasing this number. Officials of the Refrigeration Equipment Manufacturers Association forecast that most of the apartment building and store operated locker facilities will include from 150-250 individual compartments.

43,000,000 Pounds of Hops

Approximately 43,000,000 pounds of hops will be available to the American brewery industry in 1945. This is sufficient for domestic requirements. The Department of Agriculture has set limitations on the quantity of hops and hops products brewers may purchase from 1945 crop. Limitation restrictions assure equitable distribution.

Three Millions Pounds of DDT Per Month

Manufacturers turning out DDT in the United States now produce more than three million pounds a month. Until recently all has been devoted to military purposes.

Impregnation with Coal Tar Plastic Makes Soft Wood Harder, Heavier, Highly Acid-Resistant

Structures exposed to rapid deterioration by contact with acid solutions or fumes can be made acid-resistant through the use of Asidbar, a plastic-impregnated wood. The plastic treating material is liquified by high temperature and the wood being processed in the compound in sealed retorts. The treatment increases weight and hardness of wood and gives it a black surface which need not be painted; resistance to wear, abrasion, water, chemicals greatly increased. This specially treated wood can be installed with ordinary wood tools. In exploring the use of this wood for greenhouse construction, tests made by the Horticulture Department of the University of Illinois reveal that the treatment has no toxic effect on plants and flowers. (Koppers Co., Inc., Wood Preserving Div.)

Novel Storage Method

A novel method of storing apples is under experiment in Canada. The fruit is suspended in nets ten feet below the surface of a lake. The 200 tons of apples being used in this test may be used later if preservation is satisfactory. (Ohmite News.)

Simplified Practice for Ducts & Fittings

Printed copies of Simplified Practice Recommendation R-207-45 are now available from the Bureau of Commerce, Washington, D. C. at 10c a copy setting up stick lists of pipes, ducts and fittings representing the best thoughts of the industry as to what constitutes desirable practice for post war years. Fittings for both gravity and forced air heating and air conditioning are covered, the former including double wall, pipe and fittings. Sketches illustrate the 91 types of fittings, various sizes of which are included in the list. There is a total of about 1223 items in the list whereas one large producer has recently cataloged not less than 5580 varieties of pipes, ducts and fittings for the same types of installations. It is estimated that these recommendations can effect a reduction of inventory of about 40%.

Built-in Fire Protection System for Buses

A new built-in fire protection system for buses is composed essentially of fire detectors strategically located throughout the fire zone, indicating panel mounted near the driver containing red signal light, a manually controlled handle placed near operator and control head, flood valve and cylinder of compressed carbon dioxide. Special flame detectors are employed, smaller than a man's thumb. They contain two organic filaments which withstand ordinary heat but disintegrate upon contact with flame. Tests have shown that air currents are no obstacle to operation of these extinguishers. (Kidde Industry — July issue.)



THOROUGHLY VITRIFIED BODY PRODUCED IN THE LAPP CONTINUOUS KILN

• You can fully capitalize on the many trouble-saving and money-saving advantages of ceramics *only* by getting the *most* out of ceramic ware. LAPP Chemical Porcelain is different because it offers you all the "natural" advantages of ceramics *developed to their highest degree*. Complete corrosion-resistance to all acids (except HF), positive non-absorption, added mechanical strength and purity are *plus* advantages of LAPP Chemical Porcelain. These are made possible by its *extra* dense, homogenous, *thoroughly* vitrified body. A vitally-important contribution to that body is made by the LAPP Continuous Kiln. In a 380-foot tunnel kiln temperatures exceeding 2250°F are precisely controlled so that the formed clay is slowly brought to the

exact molten stage where *complete* vitrification occurs. The clay body is transmuted by fusion into *solid* Porcelain, chemically inert and well beyond the degree of vitrification found in ordinary ceramics or vitreous china.

If you've had trouble with ceramics on a problem that ceramics should solve—it will pay you to experience the difference in LAPP Chemical Porcelain. *LAPP Insulator Co., Inc., Chemical Porcelain Division, LeRoy, N. Y.*

LABORATORY QUALITY IN PLANT PRODUCTION WITH

Lapp
Chemical Porcelain

VALVES • PIPE AND FITTINGS • RASCHIG RINGS • TOWERS • KETTLES • FILTERS • SPECIAL SHAPES

When inquiring specify CP A2969 . . . see information request blank, pgs. 2-3



American MONORAIL Equipment

furnishes an ideal system for handling batch between process. It assures control using scales in the system or accompanying carriers. Jolt-free ride will not cause segregation of particles, an important feature when batch must be uniformly mixed.

To insure the quality of your finished product, install American MonoRail Overhead Handling Equipment. Our engineers will gladly show you how your product can be carried at the lowest possible cost and the highest possible efficiency.



NO OBLIGATION... Write Today!

THE AMERICAN MONORAIL CO.
13109 Athens Ave. Cleveland 7, Ohio



When inquiring specify CP A2970 — see information request blank, pgs. 2-3

Page 6

New Solutions of Plant Problems

The solutions here given are selected because of their ideas in the application of available equipment or materials to overcoming certain tough plant problems. Many of these suggest basic ideas applicable in kindred or very different problems of process production.

Self-Contained Breathing Kits Use Compressed Fresh Air

Breathing air brought to hazard; not refined at scene; embodies principles of apparatus serving in aerial war use



Using sling-type "Air-Pak" in laboratory breathing air. Stored under pressure in compressed air cylinder offers distinct advantages. Lens fogging is also a frequent problem.

Solution — A revolutionary type of breathing apparatus that had its inception in aerial use during the war has now been introduced. Called the "Air-Pak" it provides a light weight, compact, easily operated breathing apparatus that utilizes normal breathing air — not oxygen — which is stored under pressure in a compressed air cylinder. Pure breathing air is carried to the hazard and not refined at the point of service. The "Air-Pak" is ready for instant use. No long preparation period or training and practice is required. An advanced feature is the quick connect between the face set hose and the regulator. This permits the user to put on the "Air-Pak" but leaves the hose disconnected. Thus he draws outside air through the hose without dissipating cylinder supply until he is ready to use it. It requires only the slightest pressure to join the quick connect in a split second but 12-18 pounds pressure is required to disengage it. The Willson mask is utilized giving advantage of shatter-proof lenses set in rubber for unobstructed vision in all directions. The fresh, cool air drawn into mask eliminates fogging; efficient exhalation valve prevents accumulation of dangerous gases inside mask. The demand type regulator is essentially the same as that which has been employed by the Army in extreme service conditions. Air from the cylinder is conducted through orifices which are sufficiently small in diameter so that even should the valve fail completely, the orifices alone will reduce the pressure to completely protect the use. Integral with the demand type regulator is a pressure gauge showing the exact amount of air remaining in the compressed air cylinder at all times. This gauge is furnished with luminous figures and can readily be seen under all normal working conditions.

There are two types offered: the back panel model and a sling type, illustrated here in laboratory service and on the cover in picture showing its use in pump room. The cylinders are available in three sizes. They are made of cold

drawn molybdenum steel with Polymerin baked enamel finish. Integral pressure valve indicates the exact pressure and prevents using a cylinder from which air has already been drawn. The "Air-Pak" offers advantages in cleaning tank cars, fuel tanks, in chemical plants, oil refineries. The elimination of oxygen and air lines is a convenience in many applications. The "Air-Pak" is used to advantage as emergency equipment in pump rooms, valve rooms and where dangerous gases are involved. The equipment has been completely tested under actual service conditions in fire fighting and industrial fields. An eight page illustrated bulletin is available on request.

SCOTT AVIATION CORP., Dept. CP, Lancaster, N. Y.

When inquiring specify CP A2971 — see information request blank, pgs. 2-3

Data on Nickels & Alloys in Relation to Problems of Caustic Users in Industry

Tests in both plant and laboratory and operating experience over a long period have demonstrated that pure nickel is a highly satisfactory material for handling caustic solutions. Alloys also have a high resistance to such solutions; moderate additions of nickel to steel or cast iron greatly improve resistance to corrosion caused by caustic alkalies.

New Baker ARTICULATED Fork Truck cuts aisle requirements



Revolutionary new principle increases available storage area.

• This revolutionary truck* employs a basically new method of steering, by "articulating" the frame, permitting the lining-up of loads without lining up the truck. Requires about 2 feet less aisle space for spotting loads, turns sharper corners, speeds car-loading and other handling. Advantages are:

1. Works in narrower aisles.
2. Turns in a small radius.
3. Spots loads quicker and easier.
4. Control units are more accessible.
5. Simpler steering design cuts maintenance.
6. Permits mechanization of handling in many plants where hand trucks were necessary because of space limitations.

** Licensed under Stevenson Patent No. 2,544,237*

BAKER INDUSTRIAL TRUCK DIVISION of The Baker-Rawlins Company
2163 West 25th Street • Cleveland, Ohio

Baker INDUSTRIAL TRUCKS

When inquiring specify CP A2972 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

New Solutions

In the recently revised edition of a bulletin — "The Resistance of Nickel and Its Alloys to Corrosion Caused by Caustic Alkalies" there has been assembled and discussed very recent plant and laboratory tests. Many of the tests described were made by exposing the samples of the metal within equipment in actual operation. In every case the caustic concentrations and temperatures studied were selected for their direct relation to the problems faced by the commercial maker and user of caustic in the various fields. The corrosion data showing comparative results on Monel, nickel, Inconel, "L" Nickel, nickel cast irons, cast iron, mild steel, and stainless steels are summarized in 36 tables. The effect of oxidizable sulfur compounds, sulfur "shading", and stress are considered in detail. Special sections are devoted to caustic soda manufacture, transportation equipment and the problems of caustic users in the viscose, rayon, soap, pulp and paper and petroleum refining industries. Copies of the booklet may be obtained on request.

INTERNATIONAL NICKEL CO., Dept. CP, 67 Wall St., New York 5, N. Y.

When inquiring specify CP A2973 — see information request blank, pgs. 2-3

Extensible Tip Prolongs Life of Endless Belts

Provides multiple stress relief uniformly distributed over an area of the belt where the duck ends

Problem — Longer belt life through avoiding concentration of all flexing strain in a line at the ends of top and bottom plies. Such concentration of strain can soon rupture bond between the ends of the outer plies and the rest of the belt, decreasing belt life.

Solution — An extensible tip — a special, patented strength member development provides multiple stress relief, uniformly distributed over an area of the belt where the duck ends. In addition the end is welded to the adjacent ply by elastic rivets made from special "flexlastics." This extended area of stress relief gives the extensible tip prolonged life — as long as the belt — permits running the belt at higher speeds over smaller pulleys, on short center drives and increases service life. In the extensible tip splice every warp is interrupted at two or more points with stress relieving elastic rivets. All warp threads in the outer plies are cut by suitably spaced perforations filled with live "flexlastics" which are vulcanized to become "elastic rivets." These stretch and relax progressively as they pass over the arc of contact. Literature and complete details on this extensible tip and various belts available on request.

MANHATTAN RUBBER MFG. DIV., Dept. CP, Passaic, N. J.

When inquiring specify CP A2974 — see information request blank, pgs. 2-3

Has a recent use of your equipment solved a difficult chemical plant problem? The equipment may be new or from your standard line. For publication, data should state definitely (1) Nature of operation in question, i.e., cooking, cooling, mixing; (2) Difficulties involved such as control of temperature, product uniformity, lubrication or cleaning; (3) How was equipment used — in standard or modified form? (4) Results, facts on savings in time, labor, increased production or similar cost factors or extent of product improvement. Address the Editors.

CHEMICAL PREVIEW

737 N. Michigan

Chicago 11, Ill.

MILTON Roy CHEMICAL FEED SYSTEMS



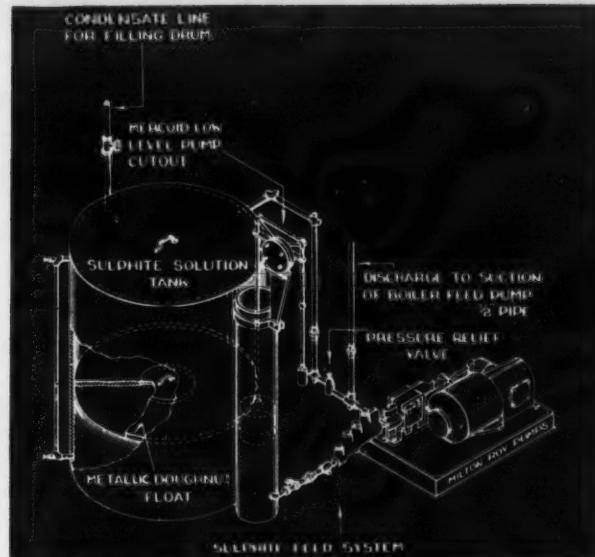
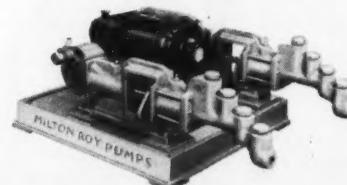
"Packaged" Units now available for all boiler water treatments

This bulletin tells how to protect your boilers against corrosion and pitting . . . prevent scale, control alkalinity, remove dissolved oxygen.

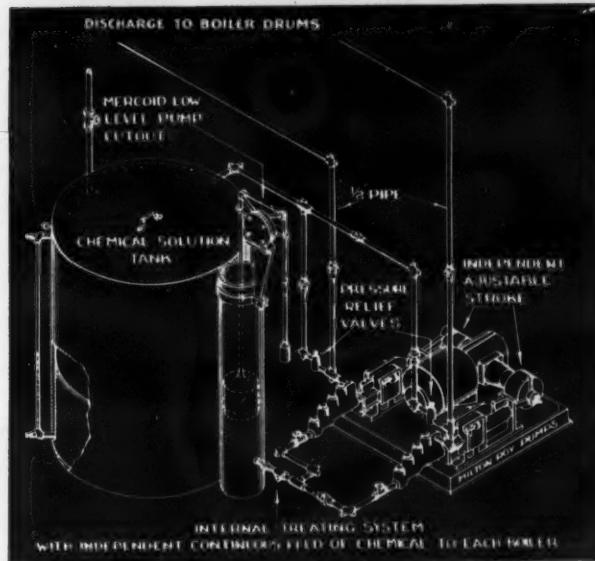
It explains why two distinct systems are recommended for feeding Sodium Sulfite and other chemicals.

It describes simple, "Packaged" units . . . complete chemical feed systems . . . to meet all steaming requirements, to inject treating chemicals without waste, in exact, predetermined quantities.

This bulletin is "must" reading for every power plant operating engineer. Send for it.



Showing how Sodium Sulfite should be fed. The bulletin describes the Milton Roy unit to do it . . . shows how to select the unit of correct capacity.



Milton Roy has made it easy to select and install boiler water treating systems . . . as easy as the purchase of any other piece of equipment.



1310 E. Mermaid Ave., Chestnut Hill - Philadelphia, 18, Pa.

MILTON Roy PUMPS

When inquiring specify CP A2975 . . . see information request blank, pgs. 2-3

Process Adapted Agitation

FOR LARGE TANKS and "NO HEAD ROOM" CONDITIONS

ECONOMY, DURABILITY AND EFFICIENCY GUARANTEED BY THESE DESIGN FEATURES

Continual improvements in design and construction make the new "LIGHTNIN" Side Entering Mixers outstanding in long life, ease of maintenance, economy and outstanding performance. Here are some of the features operating and maintenance engineers appreciate—those which reduce wear, permit needed maintenance without removal from tank, and which decrease need for servicing.

NOTE { The mounting of the shaft on protected ball bearings outside the tank. Constant pressure lubrication. Special purpose stuffing box

designs to meet particular requirements.

Ability to repack with full tank. Hard surfaced shafts and weight activated grease cup—optional.

Three Types of Drives to Meet Your Requirements

The Model SEV, Vee-belt (or chain driven unit) is recommended where quiet operation is essential, where interchangeability of motors is desirable, or where space is a factor.

The Model SEG Gear Motor Drive is recommended for outdoor installation, hazardous locations, where static is encountered or where the atmosphere is gritty.

The Model SEM is recommended for experimental jobs or where economy must be given consideration over convenience and compactness, or where it is desired to utilize drives or other parts already on hand.

WHERE TO USE SIDE ENTERING MIXERS

For large tanks, for tanks where top must be kept clear, and for installation where head room is limited—these are the places where "LIGHTNIN" Side Entering Mixers can be used to advantage. Primarily designed for large tank application, they are also suited for use in smaller tanks where top entering mixers are not practical.

THE BASIS OF OUR RECOMMENDATIONS

Twenty-five years of experience have resulted in an organization, research facilities and skill which qualify Mixing Equipment Company as a leading authority in the whole broad field of agitation.

Mixing Equipment Company offers its services in the solution of any problem involving controlled recirculation of liquids to produce physical and chemical changes, as included in the following table:

Blending Miscible Liquids	Mixing Immiscible Liquids	Crystal Size Control	Gas Absorption & Dispersion	Suspension of Solids	Heat Transfer
Simple Mixing of soluble liquids as in reducing concentration.	Washing of Liquids Extraction Contacting Caustic Treating Emulsions	Precipitation Evaporation Systems	Hydrogenation Aeration Gas Scrubbing Chlorination Gas Washing	Slurries Slaking Lime Suspension of filter aid, activated carbon, Fullers Earth, Crystals while dissolving.	Stills Evaporators Reactor Vessels Heating Cooling



ILLUSTRATIONS

1. Vee belt or chain drive, reduces length of mixer for crowded installations. User has added canopy to permit use of semi-enclosed motor out of doors.
2. Single inexpensive unit blends huge volume of gasoline. Gear Motor drive adapts mixer to outdoor conditions.
3. 4. 5. 6. 7. 8. Side entering mixers permit simple design of tank heads and piping.
9. Used for "no head room" conditions. Note access to stuffing box.
10. Battery of mixers handle pressure storage of hydrocarbons.
11. Compact Vee belt drive unit shows adaptation to cone bottom tank.

MIXING EQUIPMENT COMPANY, INC.
1085 GARSON AVENUE, ROCHESTER 9, N. Y.



MIXING EQUIPMENT CO., INC.

1085 Garson Ave., Rochester 9, N.Y.

Please send me the literature checked:

- B-66 and B-76 Side Entering Mixers
- B-78—Top Entering Mixers
- B-75—Portable Mixers (Electric and Air Driven)
- B-77—Laboratory Mixers
- Mi-11—Operating Data Sheet

Name.....

Title.....

Company.....

Address.....

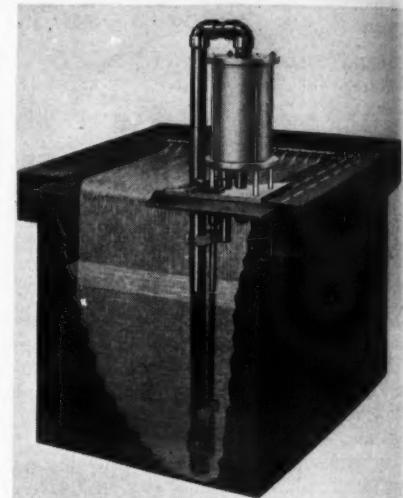
New Solutions

Lifts for Continuous Skimming of Dip Tanks

Permits continuous dipping schedule in any tanks with sump arrangement.

Problem — More efficient methods of skimming acid dip tank solutions to prevent fouling of dipped parts with floating grease and oil detached from previous dipping. Reduction in rejects and elimination of shutdowns for skimmings also desired.

Solution — A new lift has been especially designed to meet these requirements. It has no moving parts and is operated by



Acid lift has no moving parts

pounds of air pressure. It is light weight and is entirely built of corrosion resistant materials — Saran and micarta pipe and cylinder with stainless steel attachments. Flow is approximately 10 gallons per minute on 4 ft. wide tanks. (Not built for high pressure use.) Lift can be used as solution skimmer on tanks up to 10 feet wide. Built primarily for use on full automatic plating machines, it can be used on still tanks if they have a sump. It affords constant skimming action by floating off oils and grease on surface of solution into sump. The lift is easily installed in any tank with sump arrangement.

Results — Provides a constantly clean surface dip area; consistently better plating; fewer rejects. Solution is kept clean without the necessity of shut-downs for skimming.

GEORGE L. NANKERVIS CO., Dept. CP, 5408 Commonwealth, Detroit, Mich.

When inquiring specify CP A2977
— see information request blank, pgs. 2-3

For more information on product at left, specify CP A2977
— see information request blank between pages 2-3.

New Solutions

Scheduled Maintenance Programs Prolong Life of Sanitary Pumps

Daily cleaning, weekly inspection contribute to uninterrupted peak service



Above—removing nicks and burrs from parts

Below—maintenance of oil level at all times

Solution — Manufacturer, in order to aid users of pumps, particularly sanitary pumps has prepared an outline and illustrated it with photos emphasizing important operations. The suggested procedure embodies the following — (1) The plant engineer or some other responsible party should periodically, at least once a week, examine each pump for condition of impellers, gaskets, and shafts. (2) Removal with a fine file or emery cloth, any nicks or burrs in the pump body, cover, or impellers that may have been accidentally caused during operation. (3) If pump uses rotary seals, see that they are correctly assembled. (4) Use replacement parts made by manufacturer. (5) Use only one head gasket as supplied by manufacturer. (6) Disassemble entire pump head and all rotary parts daily for cleaning. (7) When disassembling put parts on board or rubber mat instead of on concrete floor to avoid nicking. (8) Use recommended oil and change at each 500 hours of pump operation. (9) Maintain oil level at all times. (10) Make manufacturers manual available to operators so that its instructions may be carefully followed.

Description — The sanitary pumps such as those which are shown in illustrations accompanying this article are made in a range of sizes for varying processing requirements. Their design contributes to easy maintenance and efficient operation. Selection includes geared head driven models; v-belt driven types; variable capacity pumps, etc. Some unusual applications of these pumps include: custards, baby foods, chili con carne and spinach. Complete information and literature describing these units in detail are available upon request.

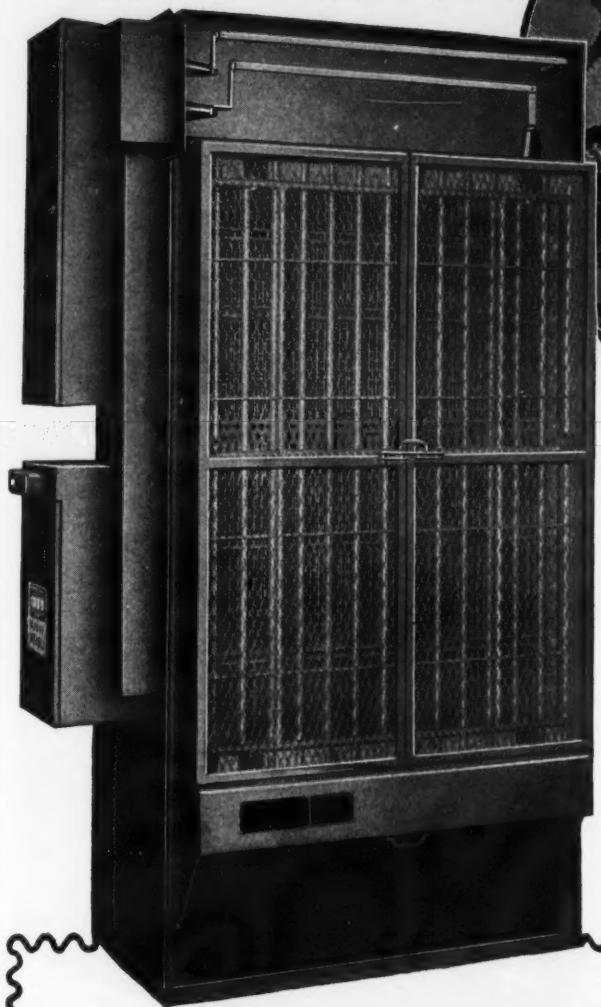
WAUKESHA FOUNDRY CO., (Pump Div.), Dept. CP, Waukesha, Wis.

When inquiring specify CP A2978 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

Smoke

HAS TO BE MAGNIFIED 40,000 TIMES TO LOOK LIKE THIS:



**... YET SMOKE AND OTHER FRAC-
TIONAL MICRON-SIZE PARTICLES ARE
REMOVED BY THE ELECTRO-MATIC
WHICH PROVIDES SUPER-CLEAN AIR!**

Only the new electronic microscopes, will show all the particles of dust that the Electro-Matic Air Filter will remove. By first giving dust particles an electrostatic charge, then attracting them electrically to viscous surfaces, the Electro-Matic makes possible a degree of cleanliness in plant atmospheres that is unapproachable by other means. In addition, this equipment is rugged, automatic and self-cleaning (an exclusive AAF development) assuring continuous operation at peak efficiency.

The Electro-Matic is a natural for chemical plants. The chemical industry's high standards of quality and purity demand uniform, uninterrupted supplies of thoroughly cleaned air. This demand is met in a most efficient, practical and economical way with Electro-Matic Filters. The Electro-Matic removes the largest to the smallest dust particles and has high efficiency in the elimination of bacteria and mold spores. Many leading chemical plants have installed AAF equipment for highest air cleaning efficiency. Write for Bulletin 250-D or an engineer's call.

AMERICAN AIR FILTER COMPANY, INC.

106 Central Avenue

Incorporated

LOUISVILLE 8, KY.

In Canada: Darling Brothers, Ltd., Montreal, P. Q.

ELECTRO-MATIC

THE SELF CLEANING
ELECTRONIC AIR FILTER

When inquiring specify CP A2979 . . . see information request blank, pgs. 2-3

PYREX PIPE

and fittings
are supplied in ...

If your process pipe requirements can be taken care of by 4" diameter pipe or smaller, you can have all of these advantages of PYREX Pipe.

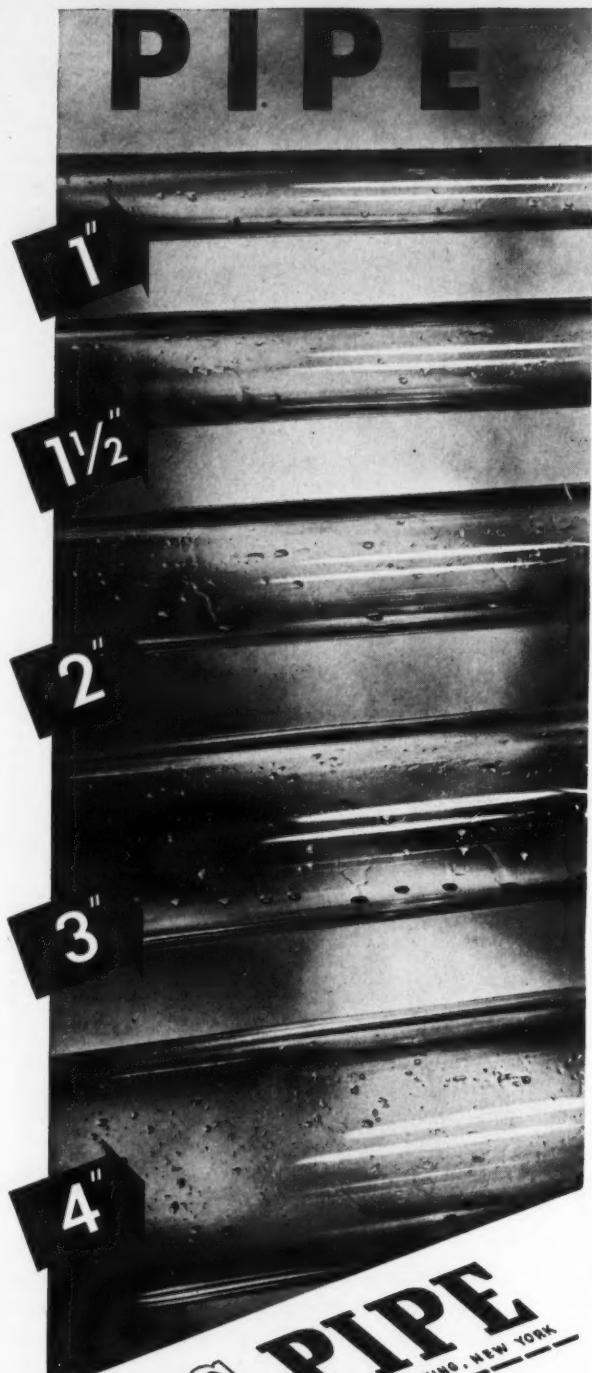
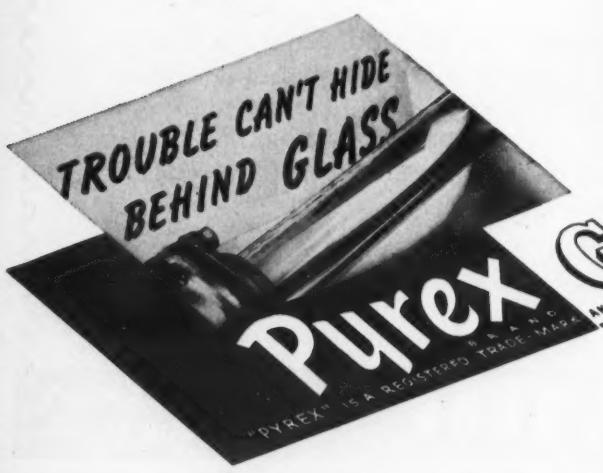
1. **Ruggedness** is proved by literally miles of PYREX Pipe that have been in actual plant service over a period of years.
2. **Transparency** of PYREX Pipe permits you to keep a visual check on your product as it is conveyed through the line.
3. **Corrosion resistance** of this special borosilicate glass gives PYREX Pipe a long life under acid conditions too severe for other materials.

In addition, PYREX Pipe withstands high temperatures and sudden changes in temperature. Also, because of the smooth hard surface, pressure drop in PYREX Pipe is appreciably less than in pipe lines of other materials.

All these features make PYREX Pipe an economical, practical material that can simplify your operating problems.

PYREX Pipe is stocked in all these diameters and in standard lengths of 10 feet. A stock of standard fittings and adaptors is also available. Where standard parts can be used, it will simplify your installation and stock maintenance. But where you prefer other lengths or special fittings, they can be easily furnished exactly to your specifications and with no excessive premium in cost. For full details write Industrial Sales Dept., CP-11

CORNING GLASS WORKS
CORNING, NEW YORK



When inquiring specify CP A2980 . . . see information request blank, pgs. 2-3

INDUSTRIAL SALES DEPT., CP11
CORNING GLASS WORKS, CORNING, N. Y.

Please send me the following literature:

PYREX Pipe Bulletin
 Installation Manual

Adaptor Connections
 PYREX Valves

Name Title

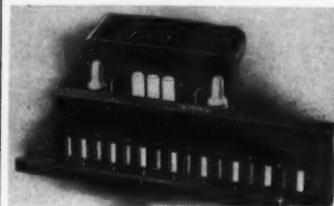
Firm

Address

New Solutions

Slide Comparator for Test of the Nitrate Ion in Boiler Water

Meets need for simple, accurate, rapid test in routine plant control of the nitrate-hydroxide ratio



Comparator with 9 standards 0-100 ppm nitrate as NO₃

laboratory procedure. A simple, accurate test is desirable for application in routine plant control.

Solution — A slide comparator is now available to determine nitrate concentration of boiler water where nitrate-hydroxide ratios are maintained to control tendencies toward caustic embrittlement. The set consists of a Taylor pH slide comparator base, a color standard slide with 9 standards representing 0, 10, 20, 30, 40, 50, 60, 80, 100 ppm of nitrate as NO₃, five M1 test tubes, 2 vials of Brucine reagent, pipette, 16 oz. concentrated sulfuric acid, 10ml graduate and 100ml beaker. The slide can be used on any Taylor pH or phosphate comparator base. A determination is made by placing 5ml of the boiler water in the beaker and adding measured quantities of Brucine and sulfuric acid. Five minutes after mixing, 10ml of distilled water is added. A yellow color develops, the intensity of which is proportional to the nitrate content. A sample of the yellow mixture is placed in one of the 5ml test tubes in the base and the color compared with the standards. If the nitrate content is higher 100 ppm NO₃, the boiler water can be diluted with nitrate free water to bring it within the range of the comparator. The accuracy of the method is not affected by ions normally present in boiler water such as phosphates, sulfites, silicates and chlorides. The method was developed in the laboratory of W. H. & L. D. Betz, Philadelphia 24, Pa. and adapted to the Taylor slide comparator by W. A. Taylor & Co. Complete information is available on request.

W. A. TAYLOR & Co., Dept. CP, 7300 York Rd., Baltimore 4, Md.

When inquiring specify CP A2981 — see information request blank, pgs. 2-3

Reclaiming Valve Plugs at 30% of Original Cost

Reconditioned valves remain in good condition after six months continuous service

Problem — In paper mill fourteen magazine grinders are driven by 2400 hp motors. Each motor drives two 54 x 64 in. pulpstones revolving at 234 rpm. Pulpwood is pushed against these stones by a pressure cylinder. These cylinders are operated by revolving automatic valves whose importance is enormous for on them depend production, quality and quantity. These valves in use for a number of years had been repaired a number of times; so often that the taper plugs had reached their limits. All showed evident

CHEMICAL PREVIEW

New Solutions

signs of leakage and wear. This meant buying new plugs each weighing around 100 pounds or 5600 pounds of bronze units, a difficult situation under the prevailing conditions.

Solution — Metallizing offered a solution to this problem. The only moving part in these valves is a bronze plug which revolves in a cast iron body. Re-boring the body to the smallest possible diameter was the first operation. Then, the plug surface was turned on a lathe 1/32 in smaller than the worn spots. Next a continuous thread was made the whole length. To roughen the surface a Metco rotary shaft preparing tool was used. Spraying was done with No. 1 Metcoloy and a Type E 2 gun. The plug was then turned smooth finish .003 in. oversize to allow for lapsing in the usual way to fit the body properly.

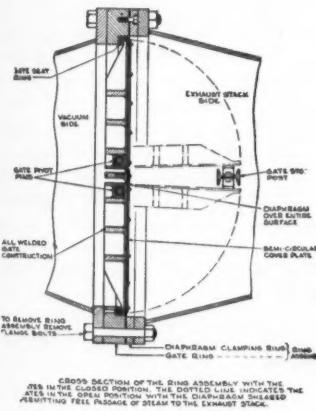
Results — In this repair operation first plug was sprayed with brass and gave good service. The Metcoloy was used on others and the surface of the plugs became so smooth in contact with the cast iron body that much less pressure is required to keep it tight without leaking. Also less power is required to operate the valve. A new plug would cost around \$90.00. The procedure followed saved \$63.00.

METALLIZING ENG'G. CO., INC., Dept. CP, Long Island City, N. Y.

When inquiring specify CP A2982 — see information request blank, pgs. 2-3

Atmospheric Relief Valve for Condensing Turbo Generators

Protects a turbine against exhaust and damage should unit go over to high pressure



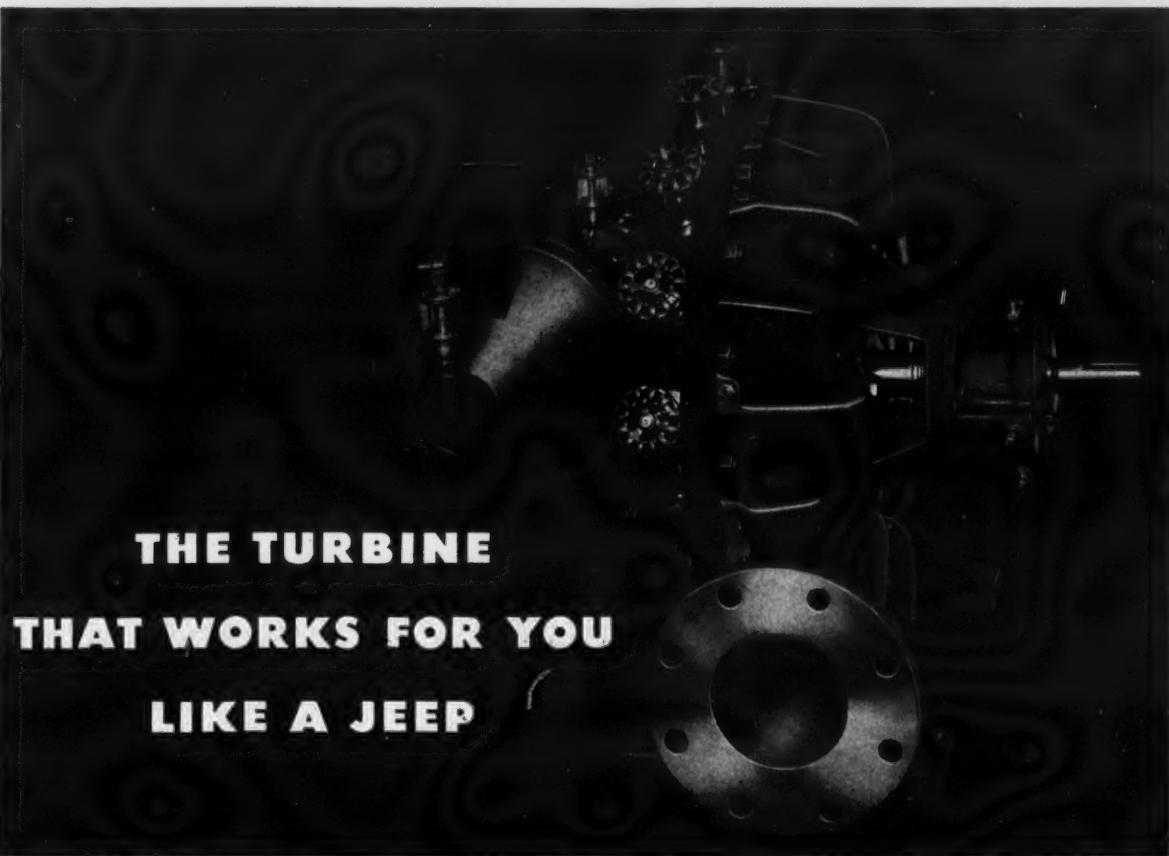
Problem — Protection of turbine against exhaust and damage should the unit go over to high pressure.

Solution — A recently perfected atmospheric relief valve which departs from conventional design is very light and compact; requires no access structure, stem, packing gland or water seal. Upon

reversal of pressure, a very thin lead disc or diaphragm is sheared mechanically by swinging gates (see illustration). This shearing is accomplished well below the allowable turbine exhaust and pressure. Once the valve has been called upon to operate, replacement of the diaphragm is relatively simple. A special non-oxidizing, acid-resisting grease protects all working parts, assuring operation at any time, thus eliminating traditional annual operation. Available in sizes from 6" to 42" to relieve from 10,000 to 550,000 pounds of steam per hour, this valve is of all-welded construction and its cost is considerably lower than standard relief valves. Literature on request.

M. L. BAYARD & CO., Dept. CP, 1969 Indiana Ave., Philadelphia 32, Pa.

When inquiring specify CP A2983 — see information request blank, pgs. 2-3



Small, but powerful . . . like a jeep. That's the Coppus Steam Turbine that you see around so many places powering pumps, blowers, fans, stokers and other equipment requiring a steady, sturdy source of small HP.

The Coppus line of "Blue Ribbon" turbines runs from 150 HP down to fractional — there are six frame sizes, and prices are in proportion. You can match a Coppus turbine to the job, saving the money you might otherwise spend for a turbine that's larger than necessary.

You'll see Coppus "Blue Ribbon" Steam Turbines on many nationally-known types of equipment. Manufacturers of that equipment know the

quality that is represented by the Coppus "Blue Ribbon" — more than 85% of all orders since 1937 has been repeat business.

Select the right size of Coppus turbine for any job that calls for "jeep duty". Like all Coppus "Blue Ribbon" products (blowers, ventilators, gas burners, etc.), they are made to extremely close tolerances with accuracy controlled by Johansson size blanks. Before shipment, every turbine is dynamometer-tested.

Write for Bulletin 135-10. Coppus Engineering Corporation, 251 Park Avenue, Worcester 2, Mass. Sales offices in THOMAS' REGISTER. Other Coppus "Blue Ribbon" products in SWEET'S.



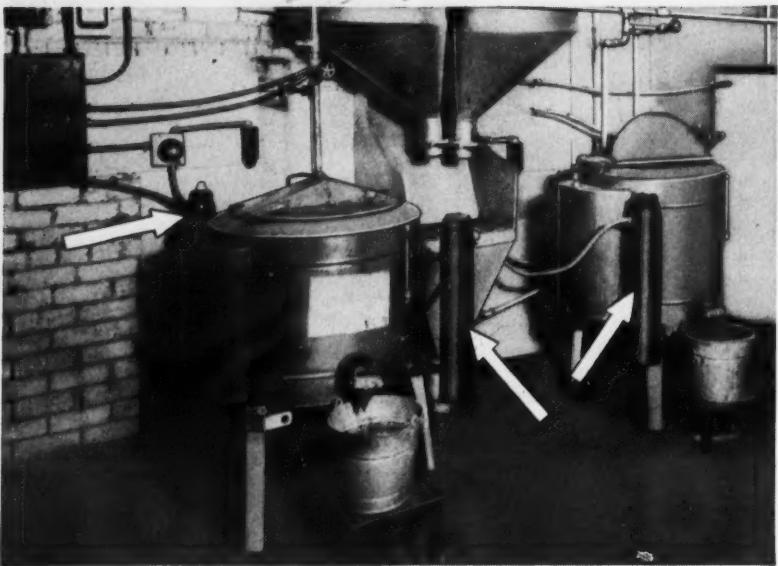
ANOTHER
COPPUS
"BLUE RIBBON" PRODUCT

When inquiring specify CP A2984 . . . see information request blank, pgs. 2-3

Chromy says:



"The heat is on!"



CHROMALOX EQUIPPED GLUE COOKERS
Glue mixtures are quickly and uniformly processed at any required temperature through thermostatically regulated heat.

Keener competition demands more efficiency in operation!

Versatile HEAT—You can apply a CHROMALOX Electric Heating Unit or a CHROMALOX Engineered Application wherever you need or use on-the-spot heat for space, gases, metals or liquids.

Controlled HEAT—You get more uniformity of product or process. Exact temperature—to 1000°F—as required by

the application, can be easily regulated and maintained—day in and day out—by thermostat or switch.

Economical HEAT—Installation and maintenance costs are low. You put all of the heat right where you need it when you need it. You save in other ways too. Get the facts.

Edwin L. Wiegand Company

7517 Thomas Blvd. • Pittsburgh 8, Pa.

CHROMALOX

"Electric Heating at its Best!"

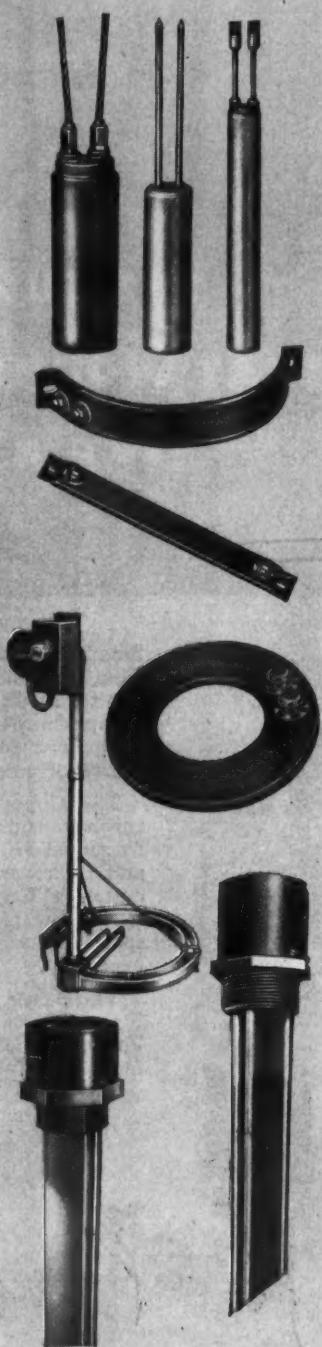
IC-10

When inquiring specify CP A2985 . . . see information request blank, pgs. 2-3

Need More Information?

Write for "100 Ways to Apply Electric Heat" Booklet, Catalog 42 and address of CHROMALOX Application Engineer serving you.

CHROMALOX Electric HEATERS



New Solutions

Special Pallet, Handling Cage, Speed Keg Shipments

Empty kegs quickly moved to filling station, thence to car, motor truck or storage



Above—filled kegs on 12 unit pallet. Below—truck moves 48 kegs in cage formerly used. Empty kegs are now handled by a wire cage which accommodates 48 empty units in one single load, easily moved by fork truck. Kegs are now moved from empty storage to filling stations in these 48 unit lots. As the kegs are filled, they are placed immediately on the 12 unit pallets then carried on fork truck to car, truck or temporary storage. One man to load the cage with empties, one fork truck and operator and one man to fill and load kegs onto pallet are all that is required to handle entire operation for fast, safe handling of these barreled and kegged products. Complete information on this handling method and the trucks illustrated and referred to here on request.

CLARK TRACTOR DIV., (Clark Equipment Co.) Dept. CP, Battle Creek, Mich.

When inquiring specify CP A2986 — see information request blank, pgs. 2-3

Redyeing Government Olive Drab

Large quantities of olive drab and other shades of wool materials are to be redyed for civilian use. Information of practical use to those concerned with this problem is contained in a bulletin just issued. "Calcofast" colors are suggested as suitable for Government fabrics because they may be applied by a simple acid color procedure; experiment showing that the colors when dyed over olive drabs give good levelness and solidity of shade without pretreatment. The sulfuric acid used for the application of these colors levels the olive drab bottom during the normal boiling period. This method reduces the mottled appearance frequently obtained some dyes are used without previous stripping. Dyeing procedure is given in detail. As olive

CHEMICAL PREVIEW

New Solutions

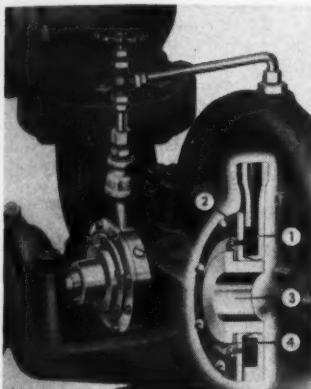
drab shades may be redyed by chrome method and these dyes are listed. Additional dyes and methods are briefly discussed. The data contains directions for redyeing 18 oz. olive drab serge. References are included on acid and milling colors and recommendations are made for achieving maximum brightness of shade. There is also a section on stripping. Copies of bulletin Number 799 — "The Redyeing of Government Olive Drab" on request.

AMERICAN CYANAMID CO. (Calco Chemical Div.), Dept. CP, Bound Brook, N. J.

When inquiring specify CP A2987 — see information request blank, pgs. 2-3

Heat Resistant & Non-Corrosive Seals For Centrifugal Pumps

Application of jet principle novel and practical solution to lower maintenance, better operation



Jet seal eliminates waste of fluid, cuts power input

Problem — In seeking improved pump performance, lowered maintenance cost, pump seal has been major factor.

Solution — Application of Jet principle to pump seal is novel and practical means of providing positive and leak proof seal while the pump is in operation and when it is idle. Jet shaft seals, heat resistant and non-corrosive seals for horizontal centrifugal pumping units are illustrated here. In principle, the seal draws pressure from high point and directs it back into low pressure area of the pump with sufficient force to seal off internal pressures. The liquid flows through (1) the liquid box, inward past (2) the orifice plate and back into the pump. Shaft sleeve (3) turns with the shaft, but is not in contact with the orifice plate, so there is no point of wear. The diaphragm (4) provides a leakproof seal while the pump is not in operation, being pressed outward by the pressure within the pump, against the shoulder within the shaft sleeve. There is no contact while the pump is turning, only momentarily when the pump is actually starting or stopping. Seals are available in both bronze and stainless steel. Sizes for all pumps one inch shaft and over.

Results — Save pump maintenance costs by eliminating waste of fluid, packing expense and causes of sleeve and shaft wear; greater continuity of pump service and by ending packing drag reduces power input. Test sets in constant use during 14 months indicate that life of the seal may be as long as that of pump. Independent engineering reports record savings as high as \$511 a year over previous packing method on single pump plus substantial savings in power input.

JET SHAFT SEALS, INC., Dept. CP, 1452 San Pedro St., Los Angeles 15, Cal.

When inquiring specify CP A2988 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

For your "ACTIVE" file

... a convenient compilation of data on 2-2-4, an industrial solvent, lubricant, humectant, and blending agent

Your COPY will be
SENT ON REQUEST



CHARACTERISTICS

A high-boiling solvent miscible with a wide variety of dissimilar liquids. Many industrial applications of 2-2-4 are indicated by its properties: coupling or blending agent, penetrant, lubricant, and mild humectant. Ask for a sample when you write for the bulletin.

TYPICAL USES

The following are typical of the wide variety of products in the preparation of which 2-2-4 is now being used:

Brake Fluids	Leather Dressings
Cutting Oils	Mercerizing Assistants
Disinfectants	Metal Cleaners
Dry Cleaning Soaps	Paper Coatings
Duplicator Fluids	Printing Pastes and Inks
Electrolytic Condensers	Reaction Media
Embalming Fluids	Rust-Proofing
Glass Cleaners	Compounds
Greases and Lubricating Oils	Soluble Oils
Grinding Assistants	Surface-Active Agents

PROPERTIES

Molecular Weight	118.17
Water Solubility	Miscible
Weight per U. S. Gallon	7.68 lbs. at 20°C
Refractive Index	1.427 at 20°C
Specific Heat	0.44 at 20°C
Heat Capacity	0.405 cal./ml./°C
Viscosity	17.2 minutes at 32°F 2.9 minutes at 75°F 104.4°C (220°F)
(Saybolt Universal)	
Flash Point	Becomes semi-solid at -40°C with no crystal formation
Netting Point	

SPECIFICATIONS

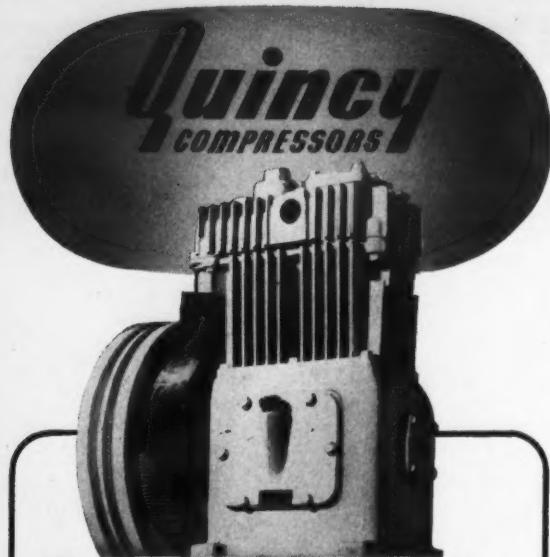
Specific Gravity	0.921—0.924 at 20°/20°C
Acidity	0.005% Maximum as acetic acid
Color	Water-white
Distillation Range	Below 190°C—none
	Above 200°C—not more than 2% 95% distills within 2° including
Non-Volatile Matter	198°C
Water	Not more than 0.005 g per 100 ml No turbidity when 1 volume is mixed with 19 volumes of 60° Be gasoline at 20°C

COMMERCIAL SOLVENTS

Corporation

17 East 42nd Street, New York 17, N. Y.

When inquiring specify CP A2989 . . . see information request blank, pgs. 2-3



The AIR SUPPLY that's--

- ✓ HIGHLY EFFICIENT
- ✓ MORE COMPACT
- ✓ BETTER LOOKING
- ✓ PROVED DEPENDABLE

... for all compressed air requirements. Sizes 1 to 80 cu. ft. displacement, up to 500 lbs. pressure p.s.i.

QUINCY COMPRESSOR CO., QUINCY, ILLINOIS
Branch Offices: New York • Chicago • St. Louis • San Francisco

When inquiring specify CP A2990 — see information request blank, pgs. 2-3

New Solutions

Ram Pacer Controls Load Speed In Testing Plastics & Metals

Attaches to testing machine; combination flexure tool and deflectometer also available

Problem — In testing metals, plastics and woods many specifications require that the loads be applied at certain and exact speeds. To date this control has been difficult to obtain as simple, fully automatic and satisfactory pacer devices have not been available.

Solution — To fill this important need as engineers and designers work in preparing their new products, often with new materials, the Ram Pacer described here has been developed. The new device which attaches to a standard testing machine, gives control over the crosshead movement at eight preset speeds .01, .02, .05, 0.1, 0.2, 0.4, 0.5, and 1.0 inches per minute. These speeds are obtained by gear changes on the synchronous motor drive unit. This unit is attached to the fixed frame of the machine while the dial portion of the apparatus is attached to the moving crosshead. The pointer sprocket wheel and the sprocket wheel on the drive unit are connected by an endless weight chain. With the gear selected for a certain speed the hydraulic valve of the testing machine is opened until the loading head rises to a point where the dial pointer stands still. This means that the pointer sprocket and the motor driven sprocket below are moving at exactly the same speed. They counteract each other. The adjustment is very simply made. The Ram Pacer is a combination tool

You should have this
FREE BULLETIN

Technical Bulletin T-6
THE RESISTANCE of NICKEL and
ITS ALLOYS to CORROSION
by CAUSTIC ALKALIES

... if you handle CAUSTICS

Here are 20 pages of practical data for users of caustic alkalies. You'll want to have a copy handy when...

- caustics cause rapid corrosion of your equipment
- metallic contamination threatens product purity
- you want to hold down equipment costs.

In addition to discussing nickel and its alloys, this bulletin contains information on the resistance of other metals to corrosion by various concentrations of caustic solutions.

Supplementing the easy-to-read text are a number of tables and charts, as well as photographs of typical equipment. Several of the principal caustic-consuming industries are also briefly described.

Write now for your free copy of this valuable guide. Simply ask for Technical Bulletin T-6. The International Nickel Company, Inc., 67 Wall Street, New York 5, N. Y.

NICKEL INCO ALLOYS
TRADE MARK

MONEL® "K" MONEL® "S" MONEL® "N" MONEL® "XR" MONEL® INCONEL® NICKEL® "L" NICKEL® "Z" NICKEL®
Sheet...Strip...Rod...Tubing...Wire...Castings...Welding Rods (Gas & Electric)

*Reg. U. S. Pat. Off.

When inquiring specify CP A2992 — see information request blank, pgs. 2-3

ANNOUNCEMENT

Bowser, Inc., and Kold-Hold Manufacturing Company are pleased to announce that the sub-zero industrial equipment formerly manufactured by the Kold-Hold Manufacturing Company will in the future be manufactured and sold exclusively by Bowser, Inc.

Kold-Hold Manufacturing Company will devote its entire facilities to the manufacture of evaporator plates and cabinet liners.

Bowser, Inc.
Woodside, Long Island

Kold-Hold Manufacturing Co.
Lansing, Michigan

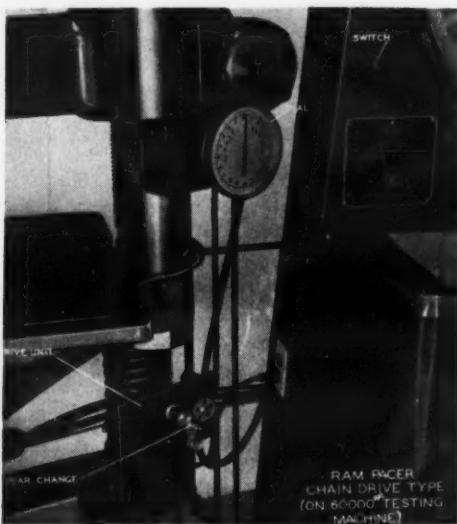
When inquiring specify CP A2991 . . . see information request blank, pgs. 2-3

New Solutions

since it can also be used as a deflectometer. The dial is divided into two hundred graduations of .001 inch each, and if the synchronous motor is not turned on, the dial will indicate the deflection of a specimen under test.

Problem — Of related interest in testing problems encountered in connection with molded plastics, plastic laminates, and woods is a combination flexure tool and deflectometer. Difficulties have been presented in simplified accurate testing of very stiff and brittle materials that deform only slightly before breaking; also very flexible materials where large deflections are encountered.

Solution — This combination flexure tool and deflectometer will make tests in bending in accordance with the latest specifications both federal and those of the ASTM and will fit any testing machine. The deflectometer measures the deflection from the center of the specimen and



Ram Pacer installed on standard testing machine

conveys this to an autograph stress strain recorder which gives the load deflection curve. One of the important features of this instrument permits the operator to adjust the magnification of the deflection in multiples of 5, 10, 20, 50, 100 and 200 times. The high magnification ratio is used for very stiff and brittle materials that deform slightly before breaking. The deflection therefore, is measured in terms of thousandths of an inch. The low magnification permits recording large deflections which may be as much as two inches with very flexible materials. In order to obtain tension, compression and flexure characteristics of the various plastic materials under extreme temperature conditions, the instrument has been made to fit inside a cabinet in which the temperature can be controlled. The deflectometer will operate from -70 degrees to +170 degrees F. Since a certain ratio must be maintained between the length and thickness of the specimen under test, the span is adjustable. The loading nose is guided so that it will travel in a true straight line.

THE BALDWIN LOCOMOTIVE WORKS, Dept. CP, Philadelphia 42, Pa.

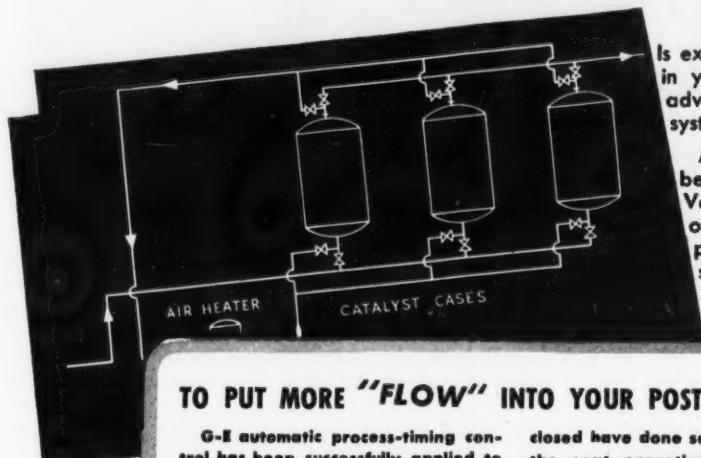
When inquiring specify CP A2994 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

AS MANY AS 900 OPERATIONS...

Automatically Timed with a

G-E PROCESS CONTROL SYSTEM



Is exact timing of successive operations a vital factor in your process? Then you should know about the advantages of a G-E automatic process-timing system.

Anywhere up to 900 "on"-off" operations can be timed in any sequence or cycle you desire. Valves, pumps, blowers, and processing machinery of all types operate at the right time and in the proper sequence. Moreover, the entire control system is so centralized that you waste no time in making observations or adjustments.

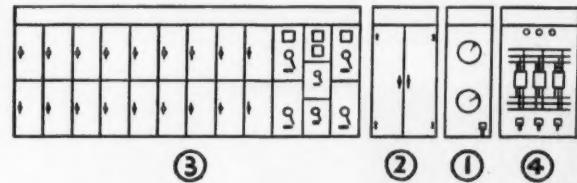
General Electric realizes that there are many chemical processes where automatic process-timing could improve product quality, reduce waste, and speed production. Is yours such a process? Why not discuss the advantages, as they apply to your process on an over-all functional basis, with a G-E sales engineer? Apparatus Department, General Electric Company, Schenectady 5, N. Y.

TO PUT MORE "FLOW" INTO YOUR POSTWAR CHARTS

G-E automatic process-timing control has been successfully applied to many processes, such as the catalytic petroleum-cracking process diagrammed above. It maintains automatic control over complex operations in three ways. First, it opens valves or similar process devices at preset intervals. Second, it makes sure that valves which should have opened or

closed have done so before it allows the next operation to take place. Third, it automatically rings an alarm and shuts down the timer if the preceding control operation has not been successfully completed. In other words, this G-E process-timing system helps to make your process more automatic and to flow more smoothly.

Automatic Process-Timing System



A typical G-E automatic process-timing control system consists of (1) a master sequence timer; (2) a group of interlocks and relays to prevent false operation; (3) a Cabinetrol unit to house

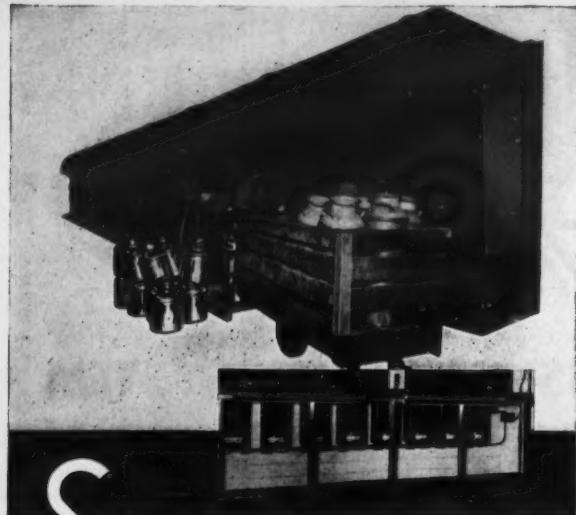
individual valve motor controls; (4) an operator's control board which provides a "picture" of the process at any one time. Complete details are in Bulletin GEA-4181.



GENERAL  ELECTRIC

Buy all the BONDS you can—and keep all you buy

When inquiring specify CP A2995 . . . see information request blank, pgs. 2-3



Signals for Tinning Teamwork

Among the many interesting problems solved by means of Wheelco "Electronic Control Principle" instruments is that of keeping tin and talc low at correct temperatures for tinning, at Buhl Manufacturing Company, Detroit.

A system of red, orange and green signal lights, tied in with an installation of ten Universal Type Wheelco Capacitrols on ten furnaces, shows the management at all times just what furnace conditions are. This instrumentation saves precious tin and insures correct tempera-

tures for coating the large milk cans.

This tinning department is believed to be the most modern for its purpose in the country.

Since January 1943, more than 30,000 Wheelco instruments have been installed to solve temperature control problems of industry. Possibly we have solved many similar to yours. Our engineers will be glad to work with you. Reconversion instrumentation a specialty.

Ask for
Condensed
Catalog
Z6300



WHEELCO
INSTRUMENTS COMPANY
841 W. Harrison St. Chicago 7, Ill.

WHEELCO
CONTROLS
A complete line, including Flame-otrol combustion safeguards . . . Capacitrol pyrometer controllers . . . Indicating pyrometers . . . Proportioning controls . . . Program controls . . . and a wide range of accessories.

When inquiring specify CP A2996 — see information request blank, pgs. 2-3

Page 16

★ INSTRUMENTS of CONTROL

Determining Acidity of Material In Colored or Opaque Solutions

Two stand titrometer eliminates color indicators; portable; no batteries, transformers required

Uses — Accurately determines the free and combined acidity of material in either aqueous or non-aqueous highly colored or opaque solutions. Instrument was originated primarily (by Shell Development Laboratories)

for determining the acidity of highly complex mixtures of lubricating oils, either completely opaque or so dark in color that the routine acidimetric color titrations could not be made. However, the titrometer has been found applicable to determine the acidity of used lubricants, detergents, fats, turbine oils, oil additives, motor oil sludges, asphaltenes, crude oils, asphalt, asphalt residues, distillates, distillate bottoms, polymers, rubber, vegetable and animal oils, fats, waxes, greases and common solvents and other water solutions. The titrometer has been found suitable for conducting ASTM proposed method of test for saponification number of petroleum products by electronic titration and also for ASTM tentative method "D - 664" Neutralization number of petroleum products by electrometric titration."

Features — The instrument is portable; no batteries or transformers are required and it is suitable for continuous duty. Two titrations can proceed simultaneously owing to the dual features of the system; and the two diverse electrode systems may be left permanently set-up.

Description — The operation is similar to that of pH determination. The instrument has two complete titration stands. The alternating current operated electrometer allows the use of any electrode system in aqueous or non-aqueous solutions. The calomel glass electrode is readable to 0.02 pH units. The titrometer is equipped with meter scales and potentiometer circuits which give a range of -1.65 to plus 1.65 volts readable to 0.5 millivolts. The use of sturdy glass electrodes and high resistance titration media in conjunction with a versatile potentiometer capable of measuring the potential between the electrode terminals of the cell having a resistance up to 5000 megohms insures long life and accuracy of the instrument. The step potentiometer is used in conjunction with the vacuum tube electrometer making the instrument continuously indicating, which requires less manipulation by the operator and enables easy and definite indication when the potential reaches equilibrium. The step potentiometer gives wide range and high sensitivity in a single indicating meter and can be used for routine or special determination. No prior knowledge of the magnitude or sign of the potential is necessary as the electrical characteristics of the circuit and meter allow measurement of the system's potential without the danger of polarizing the electrode system. Two titrations can proceed simultaneously owing to the dual



TITROMETER

feature of the system; and the two diverse electrode systems may be left permanently set up. The titrometer is portable, has a power consumption of ten watts and is suitable for continuous duty. The entire electronic system is shielded and enclosed in a metal housing. No batteries or transformers are required. It has a plus or minus charge of ten volts in a 115 volt AC line, which will result in a DC voltage change of only ± 0.1 per cent. When determining the acidity in complex mixtures the Precision "Shell" Dual Titrometer is also an aid in identifying the acidic constituents of the mixture, and in addition, it furnishes a record of possible changes taking place during sample analyses.

PRECISION SCIENTIFIC CO., Dept. CP, 1750 N. Springfield Ave., Chicago, Ill.

When inquiring specify CP A2997 — see information request blank, pgs. 2-3

Resistors With Through-bolts; Lugs at Ends Bulletin lists a new series of resistors — Number 84 — developed to meet requirements for a precision resistor capable of being mounted by means of a through-bolt and equipped with a radial lug at each end. Pie-wound to accuracy of 1% and available in three sizes. These resistors are suitable for voltmeter multipliers, laboratory equipment, radio and electrical test sets and in electronic equipment requiring extremely accurate resistance components. Bulletin 126 on request.

OHMITE MFG. CO., Dept. CP, 4835 Flournoy St., Chicago 44, Ill.

When inquiring specify CP A2998 — see information request blank, pgs. 2-3

BRISTOL'S MODEL 340M RECORDING THERMOMETERS

For Temperatures
Between
-125 F. and +1000 F.



- Moisture, fume, and dust-proof case.
- 8-inch instrument records as many as three temperatures on one chart . . . 12-inch, four temperatures.
- Choice of 24-hour, seven-day speeds . . . either spring- or electric-driven.

OPERATING PRINCIPLE:

- Gas-filled bulb, tubing (250 feet or more long) and hollow elastic element.
- Accurately compensated for temperature changes along tubing or in instrument case.

Write for Bulletin T800. THE BRISTOL COMPANY, 141 Bristol Road, Waterbury 91, Conn.



Engineers process control
for better products and profits

AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

When inquiring specify CP A2999 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

INSTRUMENTS

Combustible Gas Alarm System With Remote Analyzer Head

Analyzer head housed in explosion-proof conductel and located in area being sampled



Combustible Gas
Alarm System

Conditions. The control cabinet may be located at any distance in a gas-free area. The signal of any change in the gas and/or vapor concentration reaches the control cabinet through an electric cable and therefore the response is instantaneous.

Description — This system utilizes the effect of combustion of flammable gas-air or vapor air-mixtures on the surface of a heated element. This combustion increases the temperature and consequently the electrical resistance of the filament. The increase in resistance diverts part of the current, flowing in a special circuit, through a meter which is calibrated in terms of the lower explosive limit of the gas or vapor being detected. The heated filament is located in the analyzer head. When the gas or vapor mixture reaches a pre-selected percentage of the lower explosive limit, a series of relays close to sound an audible signal, and to control appliances. Machines can be shut down, ventilation may be started or increased, fire prevention such as CO_2 , foam or other extinguishing systems can be actuated. In fact, any function may be performed which is made possible by the opening and closing of an electric circuit. Alarm and appliance control can be actuated at the same or different percentages of the lower explosive limit, as may be required. Any number of analyzer heads can be employed. Each being a complete unit, independent of the other, each may be calibrated for individual gases. Yet, control cabinets can be grouped together, each connected to its analyzer head, and all served by the same pump. A separate panel under each control box, shows flow of sample on mercury column and mounts a "purge" and "sample" valve. The filament blow-out signal gives operator a visual and audible indication if any analyzer head is temporarily inoperative. Simple filament replacement is possible. Approved by Associated Factory Mutual Laboratories.

DAVIS EMERGENCY EQUIPMENT CO., INC., Dept. CP, 45 Halleck St., Newark 4, N. J.

When inquiring specify CP A3000 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

Uses — For detecting the presence of combustible vapor and/or gas; give an audible signal before the mixture with air becomes dangerous; control appliances such as shutting down machines, starting ventilating, etc. Warns of approach of such gases before fire or explosion can take place.

Features — The analyzer head is housed in an explosion-proof conductel and is located in the area being sampled. Thereby the analysis is made under actual temperature conditions at the point where the gas or vapor mixtures exist. This obviates the necessity of drawing the sample through a long tube, possibly through lower temperatures, which may cause condensation of all or a part of the vapor, thus registering an inaccurate measure of explosive

conditions. The control cabinet may be located at any distance in a gas-free area. The signal of any change in the gas and/or vapor concentration reaches the control cabinet through an electric cable and therefore the response is instantaneous.

Description — This system utilizes the effect of combustion of flammable gas-air or vapor air-mixtures on the surface of a heated element. This combustion increases the temperature and consequently the electrical resistance of the filament. The increase in resistance diverts part of the current, flowing in a special circuit, through a meter which is calibrated in terms of the lower explosive limit of the gas or vapor being detected. The heated filament is located in the analyzer head. When the gas or vapor mixture reaches a pre-selected percentage of the lower explosive limit, a series of relays close to sound an audible signal, and to control appliances. Machines can be shut down, ventilation may be started or increased, fire prevention such as CO_2 , foam or other extinguishing systems can be actuated. In fact, any function may be performed which is made possible by the opening and closing of an electric circuit. Alarm and appliance control can be actuated at the same or different percentages of the lower explosive limit, as may be required. Any number of analyzer heads can be employed. Each being a complete unit, independent of the other, each may be calibrated for individual gases. Yet, control cabinets can be grouped together, each connected to its analyzer head, and all served by the same pump. A separate panel under each control box, shows flow of sample on mercury column and mounts a "purge" and "sample" valve. The filament blow-out signal gives operator a visual and audible indication if any analyzer head is temporarily inoperative. Simple filament replacement is possible. Approved by Associated Factory Mutual Laboratories.

**Get the instrument
Beckman engineers
have perfected for the job!**

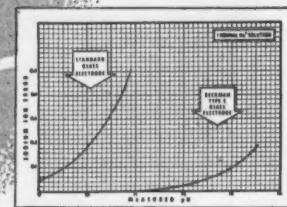
PROPER pH control of processing operations is one of the most important industrial developments in recent years. Step after step in the development of this modern tool has been pioneered by the Beckman research staff—bringing reduced spoilage, improved product quality and lower production costs to thousands of different plants in a wide variety of industries.

Through these years of pioneering, the Beckman organization—world's largest manufacturer of glass electrode pH equipment—has developed advanced types of pH electrodes found nowhere else in the industry... unique electrode assemblies that open up entirely new fields to the greater profits and higher production efficiencies obtainable through accurate pH control.

Among the many pH problems solved by Beckman engineers, the following are typical...

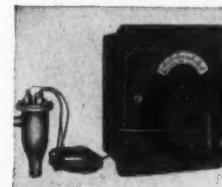
HIGH ALKALINITY Even in highly alkaline sodium solutions—a difficult or impossible application with other glass electrode pH equipment—you can obtain uniform accuracy with Beckman equipment. The Type E Glass Electrode—an exclusive Beckman development—makes measurements up to pH 13.5 with a sodium error of only 0.2 in 1 Normal Sodium solutions. In chart at right, above, compare this accuracy with that of standard glass electrodes. This advanced development is of tremendous value in highly alkaline

plating processes... in soap solutions... in processing detergents, cleaners and many other applications. Investigate what this exclusive Beckman development can mean to your present or future plant processing operations!



HIGH TEMPERATURES If yours is a process involving high temperatures, remember that Beckman—and only Beckman—has perfected a High Temperature Glass Electrode that can be used continuously in boiling hot solutions. This advancement is particularly useful in many food processes... in boiler feed water conditioning... and in a wide range of chemical processing operations.

HARD SERVICE Still another typical Beckman development is the "X9" Electrode—a glass electrode particularly designed for unusually severe operating conditions such as continuous immersion in paper pulps, in ore slurries and other abrasive materials. So sturdy is this electrode that it withstands more than 100 pounds direct force on the immersion end without breaking, and its thick walls withstand an unusual amount of abrasion.



The Beckman Automatic pH Indicator—the most advanced pH instrument available today.



The Beckman Industrial pH Meter—ideal for portable plant and field use.

WHATEVER your pH measurement or control problem, let the Beckman research staff study your particular requirements and recommend the type of pH installation you should have. You will get the most advanced pH equipment available—equipment that will still be modern years from now.

FREE! "What Every Executive Should Know About pH"—a simple non-technical explanation of pH control, what it is, how it's used. Send for your copy today!

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INSTRUMENTS CONTROL MODERN INDUSTRIES



When inquiring specify CP A3001 . . . see information request blank, pgs. 2-3

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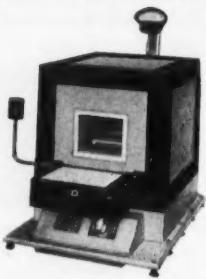
Data, specifications and illustrations . . . factual and helpful . . . about Alberene Stone, the material that outlasts the building.

ALBERENE STONE CORP. OF VIRGINIA
419 4th Ave., New York

When inquiring specify CP A3002 — see information request blank, pgs. 2-3

CHEMICAL PROCESSING FURNACE

for
LABORATORY
and SMALL BATCH
PRODUCTION



Complete with
pyrometer and
trays

\$117.50

In this furnace you will find above average versatility and range of application seldom equalled in its price range. In addition to three heat ranges, it provides seven point supplementary control within each of its three heat ranges (0 to 800° F., 800 to 1200° F., and 1200 to 1800° F.). Operates on 110 volt AC or DC. Standardly furnished with two removable porcelain trays. Work chamber measures 4 1/2" wide, 3 5/8" high, 9" deep. Request complete information on this and other models available.

K. H. HUPPERT CO.

6822 Cottage Grove Avenue
CHICAGO 37, ILLINOIS

When inquiring specify CP A3003 — see information request blank, pgs. 2-3

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INSTRUMENTS

Kinematic Viscosimeter Bath, Fast, Accurate in Routine Testing

Rigidly maintains temperature at constant levels; permits determinations continuously in oil refinery laboratories

Uses — This shell-design Kinematic Viscosimeter bath has been designed and constructed to meet the requirements for a bath capable of maintaining rigidly temperature at constant levels without appreciable variation and which would accommodate a sufficient number of viscosimeters to permit determinations to be made continuously in order to take full advantage of the operator's time. This has been the remaining problem following the perfection of viscosimeters capable of highly accurate measurement of kinematic viscosity, culminating in the Zeitfuchs viscosimeter.

Features — The bath is designed and constructed with extreme care and attention to detail. A sensitive and precise electronic regulator gives absolute control of temperature to within (plus-minus) .015° F. Continuously variable settings can be made at any point between room temperature and 240° F. The desired temperature of the bath liquid can be maintained over long periods of time insuring continuously reproducible results. The capacity of the bath is nine Zeitfuchs viscosimeters, which remain in place at all times unless removed for replacement. The bath will also accommodate kinematic viscosimeters for making determinations of asphalt liquid road materials. The cost by this method is appreciably lower than those previously used due to greater speed, ease and conven-

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Actually lifts off hard-to-clean dirt.
Use it for all cleaning jobs. . . .

Avoid the fuss and expense of different cleansers for different jobs by using Alconox for all your cleaning. Here's a concentrated wetting agent . . . not harsh . . . not a soap . . . that gets behind dirt . . . gets it off faster than anything you've ever tried! ALCONOX helps your workers do more cleaning in less time with better results. It leaves objects sparkling clean, without surface film or streaks. Toweling practically unnecessary. Saves money, too. A spoonful makes a gallon of active solution. Used by leading hospitals, food and industrial plants.

3-lb. box \$1.25; carton of 12 boxes, \$12.50;
50-lb. bag at 32c lb. f.o.b. New York.
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ALCONOX *cleans better
cleans quicker*

When inquiring specify CP A3004 — see information request blank, pgs. 2-3

**IMMEDIATE
DELIVERY**

on H-B Mercury-Thallium Thermometers

• H-B has available or in stock (Catalog No. 42) A.S.T.M. Kinematic Viscosity thermometers for use at temperatures below the freezing point of mercury. These instruments, A.S.T.M. specification EI (43F-45T), are mercury-thallium filled and have a range of from minus 61 to minus 29° F. in 1/5° graduations and with a fundamental reference point scale at 32° F.

Catalog No. 43 features Mercury-Thallium Filled Thermometers for freezing point determination of recycle styrene as specified in Office of Rubber Reserve LABORATORY MANUAL 2.2.111 dated 9-10-45. Range minus 42 to minus 29° C. in 0.05 divisions and with fundamental reference point scale at 0° C. Request complete list of Mercury-Thallium Thermometers. H-B Instrument Company, 2510 No. Broad St., Philadelphia 32, Pa.

THERMOMETERS • THERMOSTATS • RELAYS
THERMO-REGULATORS • HYDROMETERS

When inquiring specify CP A3005 — see information request blank, pgs. 2-3



SURFACE PYROMETERS FOR EVERY PURPOSE

The correct temperature of roll surfaces, masses of plastic materials and of mold cavities is vitally important in many processing industries. The routine use of a dependable surface pyrometer takes the guess-work out of such temperature determination. The Cambridge Surface Pyrometer is the ideal shop instrument for all these applications. It is accurate, rugged, quick acting and easy to use. The Roll Model is for checking surface temperature of still or moving rolls. The Needle Model is for within-the-mass temperature and the Mold Model is for checking mold cavities.

Send for bulletin 194CP

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ROLL • NEEDLE • MOLD
PYROMETERS

CAMBRIDGE INSTRUMENT CO., INC.

BUY
MORE BONDS

3706 Grand Central Terminal
New York 17, New York

When inquiring specify CP A3006 — see information request blank, pgs. 2-3

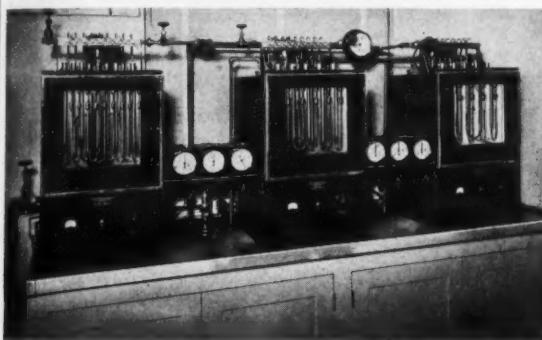


CHEMICAL PREVIEW

INSTRUMENTS

ience. Tubes remain, for the most part, permanently in place in the bath, therefore breakage is negligible. Speed is said to be at least five times that of previous used systems.

Description — The principle involved is that the rate of flow of a liquid through a capillary under a fixed head of the liquid is a measure of its kinetic viscosity. The Zeitfuchs viscosimeter is constructed so that the liquid head is very precisely fixed by the manner in which the volume of liquid in the instrument is adjusted. In brief, the procedure consists of charging the viscosimeter with the sample, allowing it to reach the required temperature in the bath, timing the flow of the sample in the capillary and calculating the result. Calculation merely involves simple multiplication of the flow time by the viscosimeter constant. The viscosimeter is not removed from the bath either for charging or cleaning. Tubes are removed from the bath only for the purposes of changing sizes or types. Manifold vacuum simplifies charging tubes with sample. Tubes are cleaned by filling with cleaning solvent, which



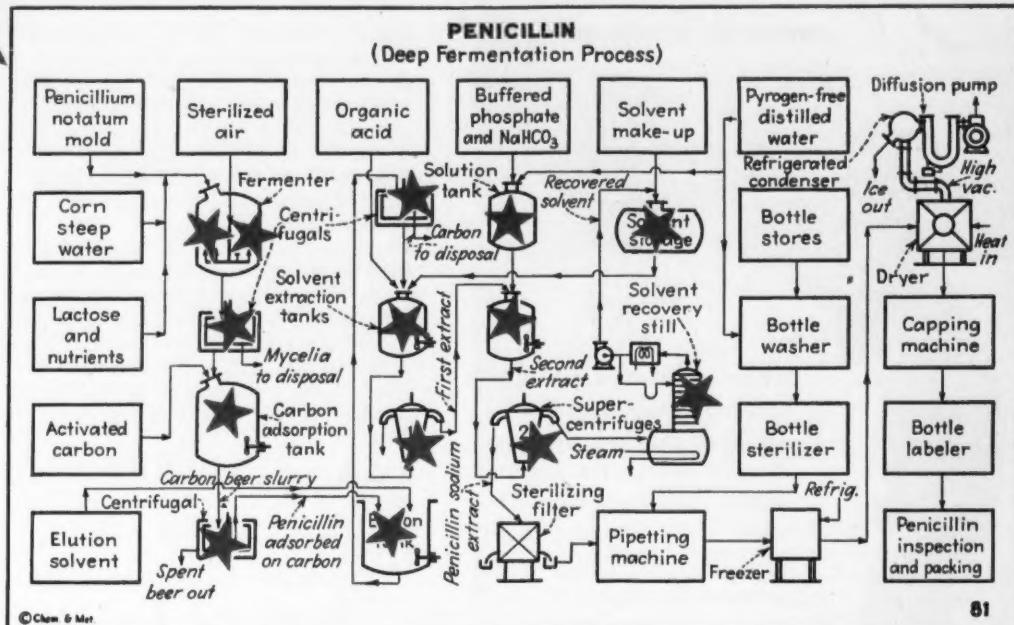
Shell Design Kinematic Viscosimeter Baths

is drawn through by vacuum system, followed by air which dries the tube. The all metal-bath tank 14" square by 15" depth contains approximately 12½ gallons of bath liquid. The outside of the tank is lined on three sides and bottom with 1¼" of rockwool insulation; front insulated by air-space between two ¼" temperature resisting high strength Tuf Lux glass panels. Bath tank and insulation are contained in an outer housing consisting of an angle steel frame, lined with 5/16" insulating panels on two sides, rear and bottom. Heating system consists of three heating elements. The first brings bath to required temperature; second operates during time bath is in use; third, an intermittent heater, maintains bath liquid at any desired temperature between room temperature and 240° F. Wattage input of this heater is shown continuously by watt meter mounted on the control panel. All three heaters are immersion type. Stirring system design eliminates vibration and employs marine type propeller; motor is brushless AC 1/15 HP. A kinematic viscosity thermometer is mounted at front of bath cover for use while making final exact bridge settings. Three 110 v. outlets are mounted on side of bath support frame for connections to be made to electric timers; stopwatch clamps if preferred. Current lead-in wire and plug furnished for making connections to 110 v. AC wall outlet. Complete information concerning the "Braun Shell-Design Kinematic Viscosimeter Bath and also the Zeitfuchs Kinematic Viscosimeter available on request.

BRAUN CORPORATION, Dept. CP, 2260 East 15th St., Los Angeles, Calif.

When inquiring specify CP A3007 — see information request blank, pgs. 2-3

The Process Chart of Penicillin Starring Photoswitch Electronic Controls



61



Amazing Achievement

Here is one of the most amazing achievement stories of modern chemical engineering — told against a background of human suffering that made it

vital to weigh life itself in the balance against every experimental grant for process improvement. Yet out of it all have come production methods so rapid and so tremendous that our supply of this life-saving penicillin now exceeds even the demands.

Problems Solved by Photoswitch

Many were the problems met and solved before final success was achieved. The delicate liquid-handling processes of the solvent-extraction phase alone demanded the best in automatic control methods and equipment. Here Photoswitch Electronic Controls proved to be truly the 14-star performer which controlled the situation, for it is significant that to meet these exacting

Photoswitch Electronic Level Controls using tank probes operate relays controlling signals, valves, pumps — provide the modern, efficient solution to every level control problem.

and unique requirements, a majority of penicillin manufacturers of the United States and Canada have selected Electronic Controls by Photoswitch.

Controls Many Operations

Typical Deep Fermentation process shown in the chart stars points where Photoswitch Electronic Controls are applied. Photoswitch Level Control actually "feels" delicate mold in fermenter — signals when growth reaches desired height. Other Photoswitch Level Controls guard against foaming — open valves to add anti-foaming agent. Quantity admitted is regulated by Photoswitch Timer. At later steps Photoswitch provides single or multiple level control of fermentation liquid in solvent extraction, carbon adsorption and elution tanks, and in centrifuges; controls amyl acetate solvent storage and recovery.

G-1

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CONTROLS FOR EVERY INDUSTRIAL PURPOSE

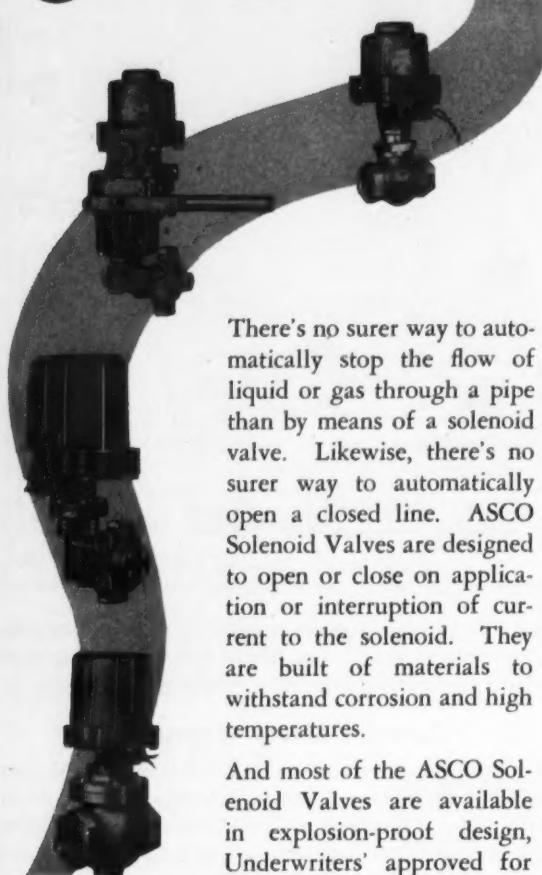
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Page 19

*Best
Safe*

to Use for Automatic Control
of Liquid or Gas Flow

to Use in Underwriters' Class I
Group D, Hazardous Locations



There's no surer way to automatically stop the flow of liquid or gas through a pipe than by means of a solenoid valve. Likewise, there's no surer way to automatically open a closed line. ASCO Solenoid Valves are designed to open or close on application or interruption of current to the solenoid. They are built of materials to withstand corrosion and high temperatures.

And most of the ASCO Solenoid Valves are available in explosion-proof design, Underwriters' approved for Class I Group D hazardous locations, making them safe to use in chemical plants.

Designing and making solenoid valves has been our business for more than forty years. We know solenoid valves and their proper application. Write us in detail about the flow of liquid or gas which you would like to have controlled automatically.



We also manufacture a quality line of Automatic Transfer Switches, Remote Control Switches, Contactors & Relays.

Automatic Switch Co.

47 EAST 11 STREET

NEW YORK 3, N. Y.

11-AB-1

When inquiring specify CP A3009 — see information request blank, pgs. 2-3

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INSTRUMENTS

Triple Cut Specimen Shear

New addition to maker's equipment for stiffness gauge; shear will cut .020" paper, plastic, metal

Uses — This new triple-cut specimen shear now offered for use in connection with this maker's V-5 stiffness gauge assures accurate cutting of test specimens 1 1/2-2 3/4" for uniform and comparable test results. It is recommended especially for shearing very thin specimen materials which if not cut to precision may affect the test results. The shear will cut .020" thin paper, plastic or thin metallic sheet in preparation for stiffness, resilience test on the V-5 stiffness gauge.

Description — A test strip is cut and detached from the sheet in one operation by simply placing the straight edge of the sample sheet against the back gauge of the shear and pushing down with a quick motion. Also available are extra auxiliary weights for the V-5 stiffness gauge in 3000 and 5000 units. These extra units extend the testing range of the instrument to cover twice the capacity of the standard units. Complete details in Bulletin Number 4506.

TABER INSTRUMENT CORP., Dept. CP, North Tonawanda, N. Y.

When inquiring specify CP A3010 — see information request blank, pgs. 2-3

Advanced Chlorine Comparators— Block and Roulette Models

Provide for ortho-tolidine test measuring separately chloramine and active chlorine and estimating error from other substances



Block comparator-standard unit a recently completed and thorough survey of the improved application of chlorine in the form of free chlorine, hypochlorites and chloramines as sterilizing agents in the treatment of water for municipal supply, for sewage and a host of industrial uses. The latest recommendations of the Committee on control of Chlorination of the American Water Works Association have been closely followed, and a new series of standards have been prepared of a size interchangeable with this company's regular pH color standards. An additional new development is the ortho-tolidine-arsenite test, which makes it possible to measure separately chloramine and active chlorine and, furthermore, it is possible to estimate the error that is caused by other interfering substances. (A pamphlet describing the tolidine arsenite test is available.)

Description — Chlorine testing outfit: — (1) Chlorine Colorimeter — for low concentrations, 0.02 to 0.3 ppm. Standards are prepared in special sealed Nessler tubes,



Roulette comparator has standards in revolving drum; internal daylight arrangements

TEMCO ELECTRIC FURNACE

MODEL GRP

FOR HEAT TREATING
SMALL TOOLS AND
PARTS, TESTING AND
LABORATORY WORK.

FAST HEATING — 1500° F. in 30 min. Temperature controlled by four point switch set for 500°, 1000°, 1500° and 1850° F. These settings easily changed by adjusting bands on rheostat coils. Dependable indicating pyrometer is calibrated in both Fahrenheit and Centigrade scales.

UNIFORM TEMPERATURE — Heating element of highest quality nickel-chromium alloy forms a continuous coil and is embedded in sides, top and bottom of muffle chamber. This construction assures uniform temperature and protects element from damage and oxidation. Complete muffle unit is replaceable.

PORTABLE — Body is aluminum. Total weight, 17 lbs. Muffle chamber, 4" x 3 3/4" x 3 3/4"; furnace overall, 9 1/4" x 13 1/2" x 10 1/2". Supplied with attachment cord. Operates on A.C. and D.C., 115 or 230 V. (be sure to specify voltage). Max. power consumption 1200 watts. Model GRP complete, 115 V. \$42.50; 230 V. \$47.50

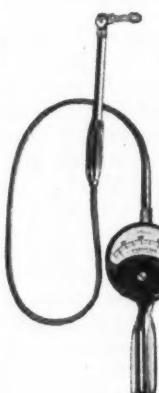
See your supply house or write

THERMO ELECTRIC MFG. CO., 476 W. Locust St., Dubuque, Ia.

When inquiring specify CP A3011 — see information request blank, pgs. 2-3

For easier
temperature
measurements—

ALNOR PYROCON



with flexible arm

★ This contact pyrometer for surface temperature measurements is available with either flexible or rigid arm, and a choice of eleven types of thermocouples. The Pyrocon with flexible arm permits easy temperature readings in many locations otherwise inaccessible. The hand-held indicator is balanced for convenient use, and is a rugged, heavy duty instrument for reliable service under industrial plant conditions. Temperatures may be measured in liquids, molten metals, oils, bulk materials, and of surfaces, whether flat or curved, stationary or moving. Several standard ranges, 0-400 deg. F. to 0-1200 deg. F. Write for descriptive bulletin listing all types.

ILLINOIS TESTING LABORATORIES, INC.

420 NORTH LA SALLE STREET
CHICAGO 10, ILLINOIS

When inquiring specify CP A3012 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

**EASY TO READ
DIAL
THERMOMETER**

*Economize with POWERS
TEMPERATURE REGULATORS*

Use a Powers No. 11 Temperature Indicating Regulator when you want the advantages of an easy-to-read dial thermometer combined with a dependable self-operating regulator. The dial thermometer gives a visual check on the performance of the regulator and makes it easy to adjust for the required operating temperature. Various dials and ranges are available.

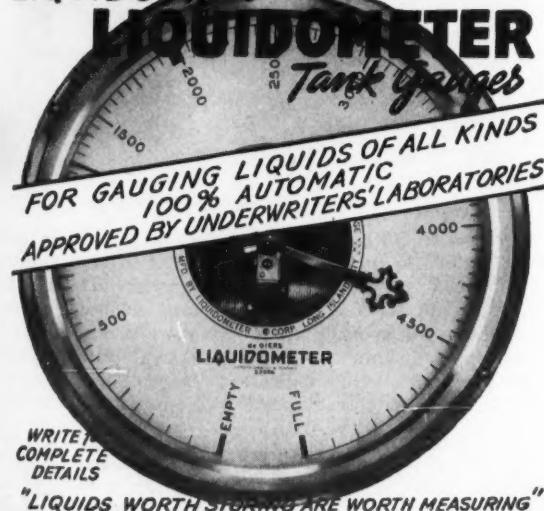
Is Easy To Install — because both the thermometer and the regulator operate from the same thermal system — only 1 tapped opening is required. Write for Circular 2511. (710)

THE POWERS REGULATOR CO.
2720 Greenview Avenue, Chicago 14, Illinois
231 East 46th Street, New York 17, New York
Offices in 47 Cities... See your phone directory.

POWERS
OVER 50 YEARS OF AUTOMATIC TEMPERATURE AND HUMIDITY CONTROL

When inquiring specify CP A3013 — see information request blank, pgs. 2-3

**COSTLY HUMAN ERRORS
ELIMINATED WHEN YOU
MEASURE VALUABLE STORED
LIQUIDS**



THE LIQUIDOMETER CORP.
38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring specify CP A3014 — see information request blank, pgs. 2-3

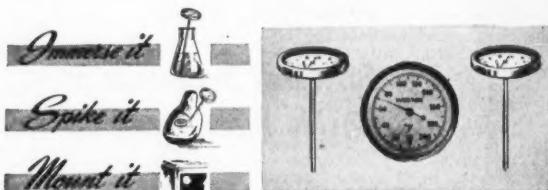
NOVEMBER-DECEMBER, 1945

INSTRUMENTS

with polished top sand bottoms. (2) Chlorine Block Comparator — (standard model) — for medium chlorine concentrations 0.1 to 1.0 ppm. This comparator illustrated here embodies an arrangement of tubes which eliminates any error due to color or turbidity of the sample, such as may be encountered in raw water, sewage and industrial wastes. The set consists of 10 chlorine standards, values 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9 and 1.0 ppm. chlorine; 1 ampoule of distilled water; 3 10 ml. test tubes; 1 — 0.5 ml. pipette and 50 ml. of ortho-tolidine reagent. This equipment is contained in a polished wooden case, the top of which serves as a comparator for color readings. (3) HC color comparator for high chlorine concentrations, 1.0 to 10.0 ppm and by dilution to 200 ppm and above. (4) Wide range chlorine comparator range 0.1 to 10.0 ppm and by dilution to 200 ppm and above. (5) Roulette comparator, (illustrated) — a wide range unit, range 0.1 to 10.0 ppm and by dilution to 200 ppm and above. Designed as a permanent installation in the control of chlorine dosage. It contains an internal daylight reading arrangement, and all standards are in the revolving drum, permitting the operator to obtain readings in a minimum of time and under uniform light conditions. (6) Combination pH and Chlorine outfits are available in special assemblies designed to contain any selected range of pH and Chlorine standards, compactly arranged in a single case. The chlorine color standards, are of a size interchangeable with the regular (15 mm) pH color standards.

LAMOTTE CHEMICAL PRODUCTS CO., Dept. CP, Towson, Md.

When inquiring specify CP A3015 — see information request blank, pgs. 2-3



WESTON *All Metal* TESTING
THERMOMETERS SERVE IN MANY WAYS!

Safely encased at the bottom of the straight or spiked stainless steel stem is the heart of the WESTON All-Metal Testing Thermometer... the all-metal temperature element...

— ready to be immersed in liquids or gases.
— ready to be spiked into foods during freezing or processing.
— ready to be mounted as a built-in job.
Easy to read... with a guaranteed accuracy within $\frac{1}{2}$ of 1%.

over the entire scale... with dependability assured by a stable and rugged all-metal temperature element encased in a sturdy stainless steel stem. WESTON Testing Thermometers are finding wide application throughout industry. Available in stem lengths up to 8". Also available in heavy duty models for industrial use. Catalog on request. Weston Electrical Corporation, 618 Frelinghuysen Avenue, Newark 5, New Jersey.

Weston *All Metal* THERMOMETERS

When inquiring specify CP A3016 — see information request blank, pgs. 2-3



Lyall
**OWE IT TO YOUR
RESEARCH MEN**

✓ ✓ ✓ to give them the very best in laboratory equipment. For, as you surely know, a well-equipped laboratory pays for itself over and over again. Both in improved products at lower production costs and in developing profitable new products.

In laboratory furniture, the best means Steelab—the fireproof furniture with exclusive lock-jointed construction, ball-bearing drawer suspensions, and micro-leveling device. Built of lead coated copper alloy steel... finished with enamel highly resistant to acids, alkalies, solvents, water, and abrasion. An achievement in functional design!

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now leaders

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Manufacturers and Engineers of Scientific Laboratory Equipment for over a Quarter Century

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Long Island City, New York

When inquiring specify CP A3017 — see information request blank, pgs. 2-3

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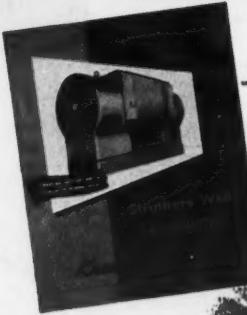
SW STRUTHERS WELLS

NORTHMASTER

Kneading Machines

Proven by Comparison

**... their ability to do a better
job, more economically.**



16 Page Technical

Bulletin

On Request

STRUTHERS WELLS CORPORATION

Northmaster Division, Erie, Pa.
Plants at TITUSVILLE, PA., and WARREN, PA.
Offices in Principal Cities

When inquiring specify CP A3018 . . . see information request blank, pgs. 2-3

INSTRUMENTS

Pneumatic Transmitters for Flow Measurement

A new 28 page Data Book No. 1000, entitled "Pneumatic Transmission" has just been issued by the Republic Flow Meters Co. It contains a comprehensive and well illustrated presentation of the principle of pneumatic force-balance and its use in industrial measuring instruments. The construction and operation of various types of pneumatic transmitters for the measurement of flow, pressure, level and density are fully described and illustrated. Copies of this new data book can be obtained upon request. REPUBLIC FLOW METERS COMPANY, Dept. CP, 2240 Diversey Parkway, Chicago, Ill.

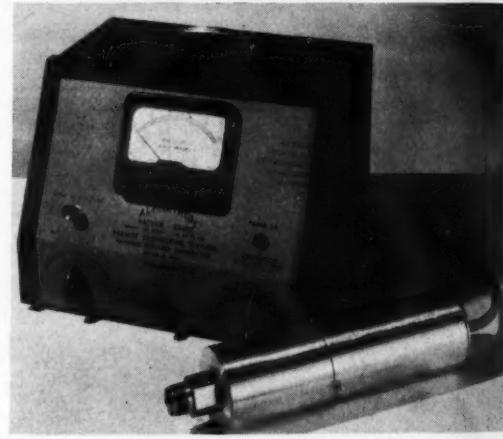
When inquiring specify CP A3019 — see information request blank, pgs. 2-3

Gauge Uses Ionization Effect of Emanations from Radium Source

Covers 0-10 mm. in 3 ranges; all reading direct pressure; ruggedly constructed

Uses — This gauge, known as the "Alphatron" is especially suitable for measuring pressures of gases other than air, such as argon, water vapor, and hydrogen, as the linear response holds true regardless of the atmosphere. Various other applications.

Features — The ionizing agent is a stream of Alpha particles emitted by a radioactive source, which permits



Ionization Gauge And Control Box

operation at any pressure, including atmospheric without any damage to the gauge. No filament to burn out and no filament current to set and maintain. There is no degassing to be done when the gauge is turned on and the absence of mercury vapor eliminates one of the common contaminants of vacuum systems. Steady emission characteristics of the radioactive element and advanced amplifier design reduce needle flicker to a minimum.

Description — Gas ions formed in the gauge proper are collected as in an ionization gauge, and the current produced on the plate is multiplied by a very sensitive amplifier to indicate continuously the total pressure on the instrument's single meter. To gain greater selectivity at low pressures it is merely necessary to turn a selector switch which provides full scale readings of 10 millimeters, 1 millimeter and 0.1 millimeter (100 microns). The meter is marked in tenths from 0 to 1 with ten subdivisions per tenth. Zero setting of gauge may be adjusted by pressing a button on panel and turning an adjustment knob. The

INSTRUMENTS

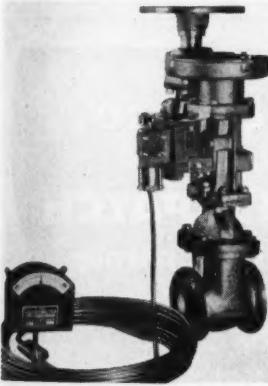
use of the ionization effect in the high pressure range avoids the lag in readings common to gauges employing principle of thermal radiation and gives instantaneous response to pressure change. The gauge can be used to measure pressures of any mixture of two gases if the percentage composition of the mixture is known. As shipped from factory, gauge is calibrated for dry air. Gauges calibrated to read directly pressure of other gases are available at slight additional charge. The standard "Alphatron" may, however, be used directly for other gases or vapors, and pressures may be obtained simply by multiplying the apparent pressure by the factor for the particular gas as given in the Operating Characteristics. The gauge housing contains the radium source, grid and collector plate in the vacuum chamber, and the first stage of the amplifier circuit. The gauge is connected to control box by a 10 conductor cable.

NATIONAL RESEARCH CORP., (Vacuum Eng'g. Div.)
Dept. CP, Boston 15, Mass.

When inquiring specify CP A3020 — see information request blank, pgs. 2-3

Hydraulic Valve Stem Position Indicator for Remote Placement

Developed for service in connection with valves in Naval use; offers safety, convenience in industrial applications



Valve and position indicator

dial through Liquidometer temperature compensated dual hydraulic transmission system, which requires no outside source of power. Thus, it will continue to function in case of temporary failure in plant power supply. With this system, the indicator dial may be located at the transmitter or any reasonable distance from the valve. The indicator is shown here hydraulically coupled to valve. (Valve made by Jenkins Bros., Bridgeport, Conn. who also developed the transmitter and hydraulically actuated mechanism for opening and closing the valves.) When used in a single plant, all indicators can be located on a single panel with the transmitters adjacent, thus making it possible for one operator to see and control the position of any valve. Complete information concerning indicators on request.

LIQUIDOMETER CORP., (Marine Div.) Dept. CP,
Long Island City, N. Y.

When inquiring specify CP A3021 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

NEW: RCA ELECTRONIC EVAPORATOR FOR HEAT-SENSITIVE SOLUTIONS

Developed for concentrating penicillin; fits many pharmaceutical and chemical processes

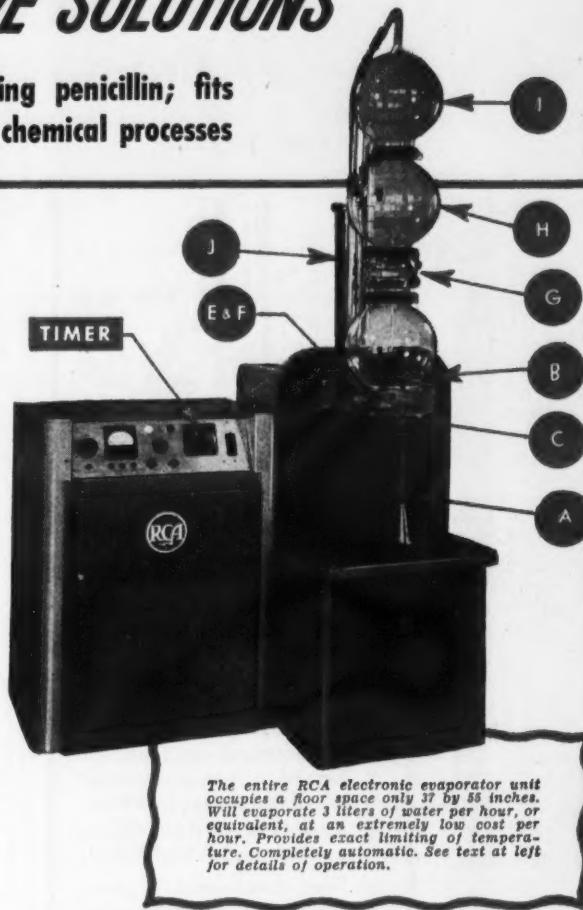
HERE'S A NEW electronic heat development of RCA Laboratories, which provides rapid, low-temperature evaporation of heat-sensitive solutions at rates up to 3 liters of water per hour. With a power input of only 4.5 kilowatts, it delivers 6800 BTU per hour, maximum, into the solution. The complete unit, including vacuum pump, electronic generator, and vacuum flasks, as shown, occupies a space only 37 inches deep and 55 inches wide. Operates on standard 220-volt, 50-60 cycle, single-phase electric power. Very economical in operation.

HOW IT WORKS: Once the apparatus has been charged and turned on, operation is *completely* automatic until the charge is concentrated to desired level.

Referring to diagram: 1. With vacuum pump running, operator opens valve C to draw solution from charging flask A into evaporating flask B. Operator then closes valve C. 2. In 2 to 5 minutes, desired vacuum is reached, and high-frequency power (from electronic generator) is automatically applied to electrodes E and F. High-frequency currents pass through flask walls and solution, causing violent boiling. Automatic electronic control maintains constant rate of evaporation. 3. Distilled vapor is drawn into water-cooled condenser unit J. 4. Loss of solution through foaming is prevented by spiral "bubble-bursting" coil G, which is heated by circulating hot water, and by expansion flasks H and I. 5. When concentration has reached prescribed point, automatic timer shuts off power. 6. Operator drains concentrate into flask A by opening valve C. 7. Operator drains condenser unit, and apparatus is ready for next cycle.

ADVANTAGES: This electronic method has several important benefits: relatively high-speed evaporation as compared with other methods used for temperature-sensitive materials; low initial cost; small floor space; low operating cost; easy installation; simple operation; easy cleaning; requires no heavy building construction; is clean in operation, and suitable for laboratory use.

EQUIPMENT AVAILABLE: Quick delivery can be made on RCA electronic evaporators. You can obtain full information, plus engineering assistance, by writing to RCA. The convenient coupon will bring you free bulletin. For detailed information, write, stating your problem, to Radio Corporation of America, Electronic Apparatus Section, Box 70-199X, Camden, N. J.



The entire RCA electronic evaporator unit occupies a floor space only 37 by 55 inches. Will evaporate 3 liters of water per hour, or equivalent, at an extremely low cost per hour. Provides exact limiting of temperature. Completely automatic. See text at left for details of operation.

SEND COUPON TODAY FOR THIS BULLETIN

RCA Electronic Apparatus Section
Box 70-199R, Camden, N. J.

Please send free description of RCA high-frequency electronic evaporator. We are interested in using it in the following process:

Process (Answer not required)

Name

Company

Position

Address

City Zone State



When inquiring specify CP A3022 . . . see information request blank, pgs. 2-3

Page 23

A WELL TYPE MANOMETER

... for Front-of-Board
Mounting



• To meet the needs for mounting a manometer on the front of an instrument board, we are supplying this popular Model A-324-FB.

It is the well type, direct reading unit. The rectangular well detaches from the body, instrument body is mounted on front of board, the manometer well then reassembled and line connections made from back of board.

This manometer is good for line pressures up to 100 lbs. per in. Available in ranges up to 100" — in steel, brass, or stainless steel construction. An attractive, efficient instrument that gives thorough satisfaction. Ask for Catalog C-11.

THE MERIAM INSTRUMENT CO.
10940 Madison Ave., Cleveland 2, Ohio
WESTERN DIVISION:
1418 Wilson Ave., San Marino 9, Calif.
IN CANADA:
PEACOCK BROS., LTD., MONTREAL

MERIAM
Instruments
ESTABLISHED 1911

MANOMETERS, METERS AND GAUGES FOR THE ACCURATE MEASUREMENT OF PRESSURES, VACUUMS AND FLOWS OF LIQUIDS AND GASES

When inquiring specify CP A3023 — see information request blank, pgs. 2-3

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INSTRUMENTS

Selenium Versus Tube Rectifiers

A four page technical bulletin presents an unusually practical, comprehensive discussion of selenium versus tube rectifiers. All the various aspects of this consideration are taken up and the various subjects in the sequence of their treatment are as follows: Filament Supply; number of separate filament supplies required in Complex circuits; Time Dekay Relays; Voltage Drop in Tube Rectifiers and Efficiency; Overload Capacity; Temperature Conditions; Life and Replacement of Rectifier Tubes; Use of running time meters where tube failure might be serious; value of tube replacement schedule. Development of Selenium rectifiers; Inverse voltage: less maximum voltage capacity; cost of additional plates for higher voltage; theoretical and economic limits; Current capacity; Parallel operation for greater current output; Efficiency: voltage drop of 1 v. compared to 8-13 for gas tube rectifiers. Life of selenium rectifiers; speed. Choice of selenium rectifiers for low voltage, high current applications; tube rectifiers for high voltage, low current. Basis for determination of which type in borderline cases: Ratio of DC voltage to DC amperage — ruggedness requirements — maintenance and replacements — auxiliary equipment required (filaments, transformers, cooling fans, etc.) cost and size — local temperature — efficiency — speed and operation. Copies of this bulletin — "Selenium Versus Tube Rectifiers" on request.

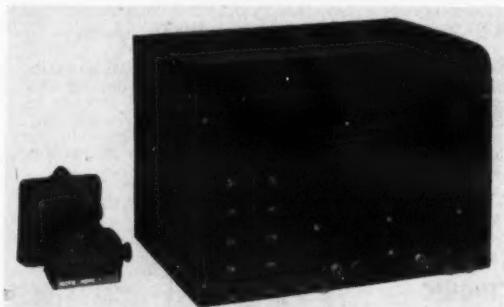
GREEN ELECTRIC CO., Dept. CP, 136 Cedar St., New York 6, N. Y.

When inquiring specify CP A3024 — see information request blank, pgs. 2-3

Two Decade Electronic Counter

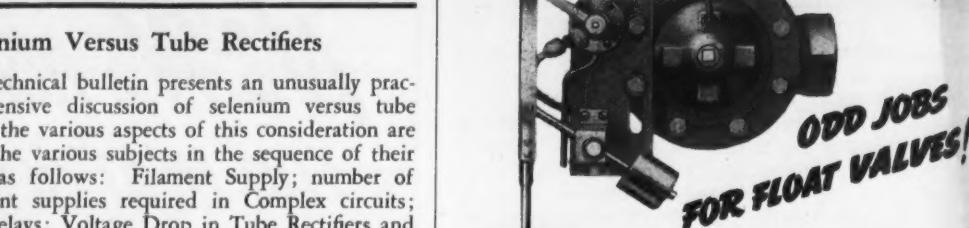
Particularly applicable for counts over 10 cycles per second; electro-mechanical counter may be connected in series

Uses — Particularly applicable for counts exceeding ten cycles per second and in installations where mechanical counters might be subject to extreme wear prematurely



Electronic counter may be connected to electro-mechanical counter because of high speed continuous operations.

Description — Used alone as a two-decade instrument, the maximum count capacity of the electronic counter is 100. A tube-operated relay is provided for cases where the quantity to be counted exceeds 100. The relay has a single-pole, double-throw contact which is brought out to terminals on the front panel of the unit, and operates once for each 100 counts. An electro-mechanical counter may be connected in series with these terminals and an appropriate external power source, such as the A.C. line. Each 100 counts of the electronic counter will then cause one



Modern industry has been having some embarrassing new problems in level and flow control — and Clayton Float Valves with Feather-Touch Control have been solving those problems. And all the time, these valves have been doing hundreds of old familiar jobs too — controlling levels in everything from sump tank to feed water heaters.

Clayton Float Valves with Feather-Touch Control operate with no line shock or water hammer — close drip-tight. Separate float unit and valve are available for remote control on special installations.

WRITE FOR ENGINEERING DATA
REPRESENTATIVES IN PRINCIPAL CITIES

VALVE DIVISION

CLAYTON

"Feather Touch" CONTROL

CLAYTON MANUFACTURING COMPANY, ALHAMBRA, CALIFORNIA

When inquiring specify CP A3025 — see information request blank, pgs. 2-3

For faster, more accurate tests in
PRODUCT CONTROL

use a

DESPATCH
Laboratory
Oven



● A Despatch Laboratory Oven is first choice when you want dependable data faster . . . because it's expressly built to offer more speed and greater accuracy over a wider heat range, 35°C. to 260°C.

2 TO 8 MIN. HEAT RECOVERY
after loading cold charge. Saves time
on all tests and makes rush work easy.
±1°C. CONTROL SENSITIVITY
guarantees accurate heat-processing.

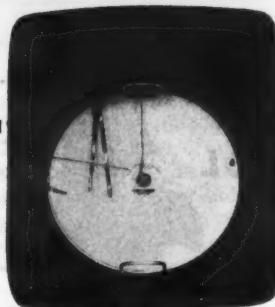
UNIFORM HEATING throughout
chamber assures identical heat application.
Sizes, inside, 13" x 13" x 13"
and up. IMMEDIATE DELIVERY of all
standard models, electric or gas.

WRITE FOR
BULLETIN TO SCP

DESPATCH
OVEN COMPANY

When inquiring specify CP A3026 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



Continuous Stability in RATIO FLOW CONTROL!

Wherever flow rates of two fluids must bear a definite ratio to each other through control of only one, Foxboro's Stabilog Ratio Flow Controller offers continuous automatic maintenance of this ratio. Performance of this original ratio flow controller has never been surpassed in accuracy and stability. Ratio can be readily changed by simple turn of thumb-screw . . . orifice plates remain unchanged except for extreme changes.

We will be glad to consult with you regarding your specific application. The Foxboro Co., 190 Neponset Avenue, Foxboro, Mass., U. S. A.

FOXBORO RATIO FLOW
CONTROLLERS

When inquiring specify CP A3027 — see information request blank, pgs. 2-3

DAVIS SOLENOID VALVES offer—

Steam, Air, Water,
Oil Applications,
Extreme Accuracy
Sizes 1/2" to 12"
Pressures to
1500 Lbs.

Davis No. 93 Single-Seated,
Solenoid Valve. Sizes 1/2" to
4", for gas, steam or liquid
service.



Davis Solenoid Valves are operated by any device that will make or break an electrical circuit, and are made either normally open or normally closed — explosion proof if desired.

Davis valves adapted to solenoid operation include: single seated valves for high or low pressures, balanced valves, butterfly valves, and 3 or 4-way pilot valves. Reciprocating or rotary stem type. For extreme accuracy, the Davis Two-Step Solenoid Valve is available.

Write today for details

DAVIS REGULATOR CO.
2562 SOUTH WASHTENAW AVENUE
CHICAGO 8, ILLINOIS

Solenoid Valves
available with the
Dia-Ball leakproof,
packless transmission
unit.

When inquiring specify CP A3028 — see information request blank, pgs. 2-3

INSTRUMENTS

operation of the electro-mechanical counter. When operation of the relay and an external mechanical counter are not involved in the application of the two-decade electronic counter, it may be used alone, at counting rates up to 20,000 per second. The instrument comprises an input section, suitable for any of the four enumerated types of input circuits: — a) Contact Closure; b) Pulse Signals; c) Sine-Wave Signals; d) Square-Wave Signals. It further consists of two standard counter-decades, designated respectively as the "units decade" and the "tens decade", an output relay stage, and a power supply. There are many counter application problems where an operation is to be controlled, or a signal to be given, after a predetermined number of counts. To satisfy this demand special designs may be made to enable the handling of any predetermined number. The two-decade electronic counter is complete with power supply, and is ready for operation from a nominal 115 volts, 60 cycle, A.C. power line. No special types nor special selection of vacuum tubes are required for the counter's 12-tube complement. Outside dimensions of the cased instrument are: Width, 13 1/2"; Height, 8 1/8"; Depth, 10"; Complete Weight, 20 lbs. The equipment is sturdily built and designed for long use under rigorous conditions. For complete information on the counter discussed hereinabove write for comprehensive bulletin. For individual application problems, the company's staff of field engineers is available for consultation.

POTTER INSTRUMENT CO., Dept. CP, 136-156 Roosevelt Ave., Flushing, N. Y.

When inquiring specify CP A3029 — see information request blank, pgs. 2-3

For Checking Machine Speeds AND MOTOR-DRIVEN ELEC. EQUIPMENT

GENERATORS
DYNAMOTORS
CONVERTORS
POWER PLANTS

Jones Tachometers give an instant and accurate check on RPM. For checking and testing motor speeds; for checking shafts, and rotating parts on equipment, both for RPM, feet per minute and other special conversions. Continuous indicating, guaranteed calibration. Jones multi-range portable hand tachometer shown is lightweight and heavy-duty, 300 to 12000 RPM. Complete with 6" extension rod, convex and concave rubber tips and steel tip, 12" peripheral disc, and carrying case. \$60 FOB Stamford, Conn.

A wide variety of fixed and portable tachometers with many different ranges available. Write for complete specifications.



JONES
TACHOMETERS
JONES MOTROLA CORP.
421 Fairfield Ave.
Stamford, Conn.

When inquiring specify CP A3030 — see information request blank, pgs. 2-3



*This isn't just
our own appraisal!*

For many years this expression has been associated with Marsh Gauges and Dial Thermometers.

We call it an expression, rather than a slogan, because slogans are trumped up. This expression simply came up. We enclose it in quotation marks because it expresses the feeling of hundreds of users toward Marsh instruments. Marsh instruments have become the standard of comparison; Marsh is "the standard of accuracy".

When a product reaches such a position, few people ask how it got there. But if you ever take the trouble to check back over the many years during which Marsh has been making gauges, you will find that there is no mystery about it.

You will find that Jas. P. Marsh Corporation has not only shown the way in big developments, but has always given more attention to the small details . . . that count most. You will find, moreover, that this fidelity of detail is not confined to the more expensive instruments, but is common to all Marsh equipment in relation to the service for which it is built.

Why settle for less than the instruments that set the standard?

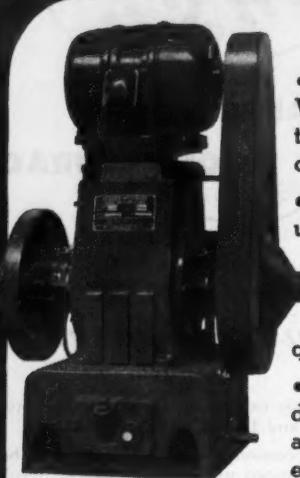
JAS. P. MARSH CORPORATION
2095 Southport Avenue, Chicago 14, Illinois

THE GAUGE WITH THE "RECALIBRATOR"

A gauge built to Marsh Standards is not likely to be knocked out of adjustment. But if it is, the Marsh "Recalibrator" will quickly restore its accuracy. Simply turn the "Recalibrator" screw until the pointer is at zero when not under pressure. The gauge will then be right at all points on the dial. Unlike other methods of resetting, the "Recalibrator" gets at the root of the error—restablishes the relation of bourdon tube to movement—actually recalibrates the gauge.

When inquiring specify CP A3031 — see information request blank, pgs. 2-3

Stokes MICROVAC Pumps HEART OF HIGH VACUUM SYSTEMS



- Higher Vacuum (in the low micron range)
- High volumetric efficiency
- Low power requirement
- Complete discharge of air—no re-expansion
- Continuous dehydration of oil—no moisture to re-evaporate
- Discharges sudden slugs of liquid without injury
- Easily accessible, non-corrosive discharge valve
- Rugged, compact, simple construction
- Long life . . . negligible maintenance
- Five sizes—from 10 to 235 cu. ft. per min.

Stokes VACUUM GAUGES (Patented McLeod Type)

Are Always Accurate



- Require no calibration
- Rapid readings
- Simple to operate—just tip and read
- Two models—(AA)—0 to 5000 microns
(BB)—0 to 700 microns, with readings to 1/10 micron.

F. J. STOKES MACHINE CO.
5974 Taber Road, Philadelphia 20, Pa.

Stokes High Vacuum PUMPS • GAUGES • EQUIPMENT

When inquiring specify CP A3032 — see information request blank, pgs. 2-3

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INSTRUMENTS

Simplified Optical Pyrometer

Self-contained, accurate, direct reading; only three simple operations required to use it



Pyrometer weights 3 lbs.

Employed enables rapid temperature determination of minute spots, fast moving objects or the smallest streams at comparatively long distances and point by point—in other words "spot temperatures." This is done by rotating a graduated optical absorption wedge to change the apparent brightness of the hot objects under measurement, until a small luminous test mark—which appears in the field of vision—disappears. The temperature in degrees Fahrenheit (or Centigrade) corresponding to this position of the rotated absorption wedge, can then be read directly on a wide scale attached to the wedge.

Description — The pyrometer is equipped with an ordinary battery and an ammeter and adjusting rheostat, these being in circuit with a small calibrated lamp to illuminate the small comparison test mark and to maintain its intensity or brightness constant. The instrument is extremely compact and easy to operate. Only three operations are required to use it. Move slide button to zero point and get clear field of vision; clear vision is obtained by turning a knurled ocular lens adjusting ring. When taking temperature readings insert red glass filter. Set temperature scale to zero. Check the current value of the lamp by pressing ammeter contact button and watch indication on ammeter scale. The "Pyro" optical pyrometer is available in single range 1400° F. — 2500° F. and 1800° F. — 3400° F. Double range 1400° F. — 2200° F. and 1800° F. — 3400° F. (Also in foundry type and triple range—red scale indicating true spout and pouring temperature of molten iron and steel when measured in the open, corrected for emissivity) Higher ranges up to 7500° F. on special order. Literature on request.

THE PYROMETER INSTRUMENT CO., Dept. CP, 103 Lafayette St., New York, N. Y.

When inquiring specify CP A3033 — see information request blank, pgs. 2-3

Temperature Controls for Tanks, Sterilizers & Process Work

For textile, food and chemical processing equipment,
metal cleaning vats, etc.

Uses — These temperature controls are for tanks, sterilizers and process work. Typical applications: water and oil heaters; textile, food and chemical processing equipment; metal cleaning vats; can and bottle washers.

Description — Offered in several series to meet exacting

FOR VALVE REMOTE CONTROL



Chemical
Paper
Foods
Petroleum

HILLS-McCANNA diaphragm valves (SAUNDERS PATENT) with Westinghouse Flex-air and Controlair Controls

HERE'S an efficient and practical way to control valve operations from any convenient point in your plant . . . with Hills-McCanna air-actuated valves. This unit combines the proved principle of the Hills-McCanna Diaphragm Valve with Westinghouse Flex-air and/or Controlair Controls and air-operated piston to give you smooth control . . . finger-tip service at all times.

And since this new Hills-McCanna unit . . . like all Hills-McCanna valves . . . has no packing, there's no sticking of the stem to interfere with easy, accurate positioning.

For ordinary open and close valve operation the Hills-McCanna unit is used with Flex-air Controls. Dependable throttling service may be had with Controlair and Flex-air Controls and a Hills-McCanna Diaphragm Valve and Piston operation.

This improved type valve is available in sizes from 4" to 12" inclusive. Send today for complete data on installation and operation.

HILLS-McCANNA COMPANY
2370 W. Nelson St., Chicago 18, Ill.

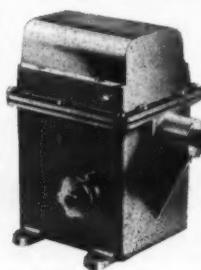
Proportioning Pumps — Force Feed Lubricators — Chemical Valves
Air and Water Valves — Marine Valves — Magnesium Alloy Castings

When inquiring specify CP A3034 — see information request blank, pgs. 2-3

BARBER-COLMAN

POWER UNITS

TO POSITION VALVES, DAMPERS, AND OTHER UNITS



These POWER UNITS are ideally suited for industrial applications. They feature built-in limit switches and a high torque motor with gear reduction, oil submerged, for long life and dependable operation. Control action may be governed by a recording or indicating controller or other contact making control instruments.

POWER UNITS are available for "on-off", floating, and proportioning modes of control, including proportioning with manual or automatic resetting.

Write for
Bulletin F-1912
"POWER UNITS"

BARBER-COLMAN COMPANY
1201 ROCK ST. • ROCKFORD, ILL.

When inquiring specify CP A3035 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

INSTRUMENTS

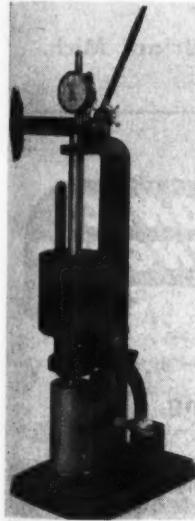
requirements. The 117 series controls offers a pilot operated, modulating type valve built for steam pressures up to 125 lbs. (117HA control) Sensitive and quick acting, it functions upon a drop of 1 degree or less in air or liquid temperature. Available in sizes 1 1/4, 1 1/2 and 2 inches — range 130-170 degrees and special ranges. Another control (117LA) has the same features but is built for maximum steam pressure of 30 pounds. The 150 series is a self-powered modulating type valve designed for steam pressure up to 125 pounds and suitable for dead end service. Well suited for tanks and process applications where space is limited. An R50 series, reverse acting valve opens on rise of temperature. Bulletin describing these and additional valves for similar applications on request. Bulletin number 451.

STERLING, INC., Dept. CP, Milwaukee, Wis.

When inquiring specify CP A3036 — see information request blank, pgs. 2-3

Sand Rammer Designed to Obtain Precisely Rammed Specimen

Equipped for rapid moisture determination and flowability determination



Sand Rammer for 2" x 2" specimens

Uses — This improved sand rammer is built in accordance with AFA specifications. It incorporates improvements that were the result of extensive research to determine items that would aid sand technicians to obtain a precisely rammed specimen of 2" x 2" dimension due to the further elimination of the personal equation and wear of the unit.

Features — The rammer incorporates the following improvements: Longer weight raising cam bearing; take-up on weight raising cam bearing; lever cam for conveniently and easily raising rammer-plunger-weight assembly during the loading and unloading cycle. Insures a uniform impact between plunger and sand on loading. Greater strength in rammer support frame; greater weight in rammer base. Design permits easy cleaning.

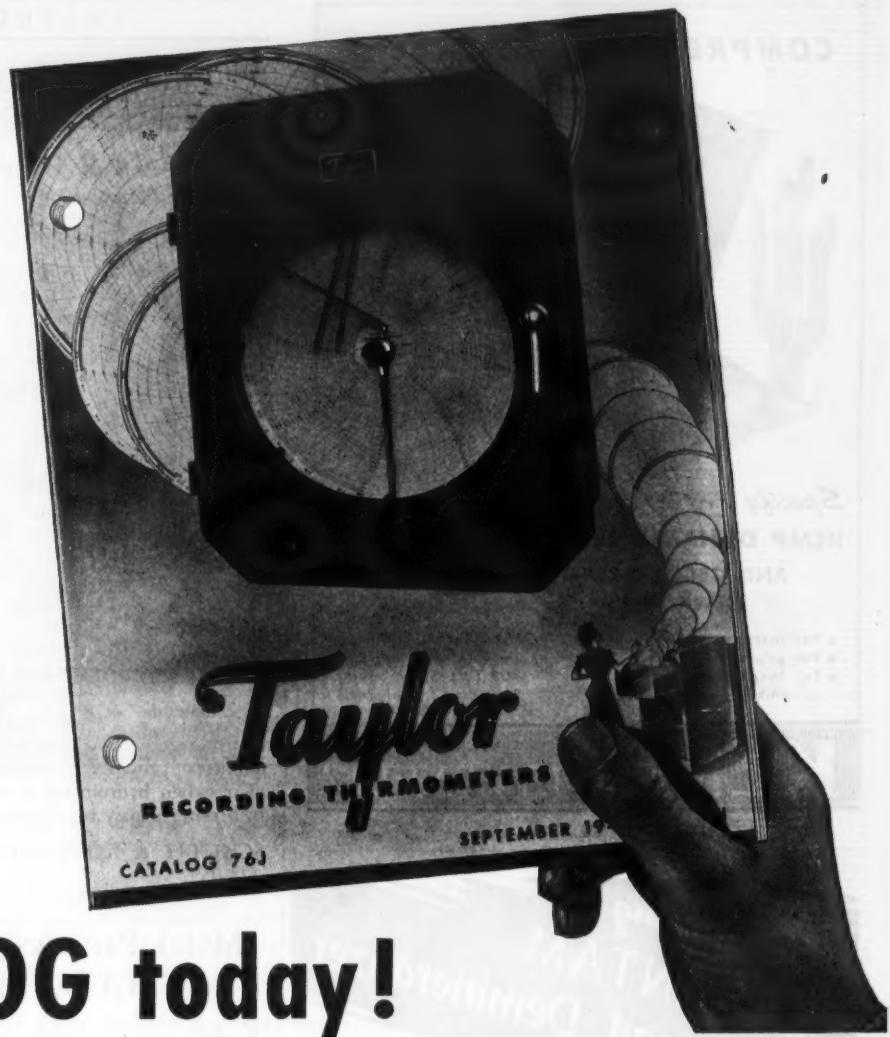
Description — The sand rammer as illustrated is equipped for rapid moisture determination and flowability determination. The 2" x 2" rammed specimen is used for testing the permeability, green and dry compression strength, and the sintering test of molding sand. The flowability indicator mounted on top of sand rammer improves visibility of flowability dial, cleanliness of indicator and the life of indicator by reducing shock. The flowability indicator automatically moves to inoperative position on raising plunger assembly. Moisture indicator and flowability indicator are actuated by contact with flat end of plunger rod. Complete details on request.

HARRY W. DIETERT CO., Dept. CP, 9330 Roselawn Ave., Detroit 4, Mich.

When inquiring specify CP A3037 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

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THIS FREE 32-page catalog is as smart as a Quiz Kid when it comes to Recording Thermometers. It knows and tells just where and when to use a Recording Thermometer and how it works. It tells how a Taylor Recording Thermometer improves product quality and lowers costs, by clearly indicating where and when waste in heating or cooling media occurs, and how more efficient control would eliminate it. Here are a few other valuable facts contained in the booklet:

- Value of a permanent minute-by-minute record of process operation.
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- Wide variety of bulb forms and connecting tubing to give best resistance to erosion or corrosion and fastest temperature response consistent with long life.
- Records one, two or three related variables on a single chart.

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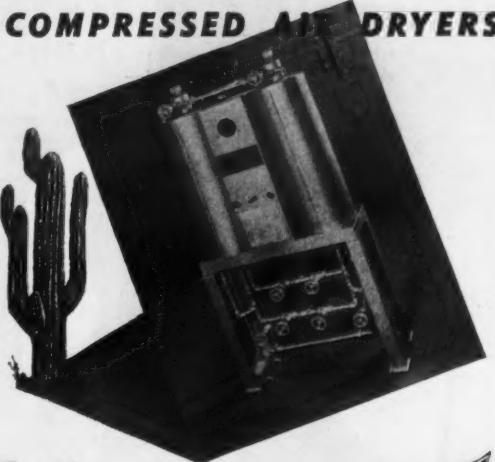
• Taylor Accuratus Tubing — a special development in mercury-actuated tube system which insures the accuracy of temperature records even when instrument is located several hundred feet from point of measurement.

Be sure to write for your free copy of this helpful catalog today! Ask for Catalog 76-J. Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow and liquid level.

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

When inquiring specify CP A3038 . . . see information request blank, pgs. 2-3

COMPRESSED AIR DRYERS



Specify . . .

KEMP DYNAMIC DRYERS
AND GET SUB-ZERO
DEWPONTS

- For instrument lines
- For process work
- For inspection and assembly departments



For Bulletin 25-D write
The C. M. Kemp Mfg. Co.,
405 East Oliver Street,
Baltimore 2, Maryland.

KEMP BALTIMORE

When inquiring specify CP A3039 — see information request blank, pgs. 2-3

Announcing
the BANTAM
Barnstead Demineralizer

A New Way to Purify Water

The Barnstead BANTAM Demineralizer is the simplest, quickest, method of producing high-test de-ionized water at a flow rate of from 5 to 15 gallons per hour. To use, merely turn on water supply—the BANTAM operates without heat of any kind.

No regeneration is necessary because the BANTAM employs a renewable resin cartridge.

Eliminates problem of water storage, since the demineralized water can be drawn directly from the BANTAM as needed. Write for free Bulletin.



Barnstead
STILL & STERILIZER CO. INC.

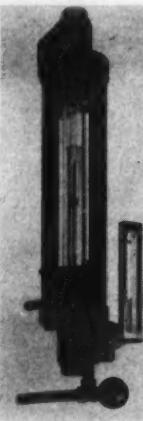
5 LANESVILLE TERRACE, BOSTON 31, MASS.

When inquiring specify CP A3040 — see information request blank, pgs. 2-3

INSTRUMENTS

Continuous Measurement Provided By Specific Gravity Indicator

Readily installed in new or present pipe lines; connections undisturbed in cleaning



Specific Gravity
Indicator

hydrometer within the tube. An integrally mounted thermometer provides for convenient temperature measurement when hydrometer is read. While normally supplied in bronze, it may be obtained in any alloy on special order.

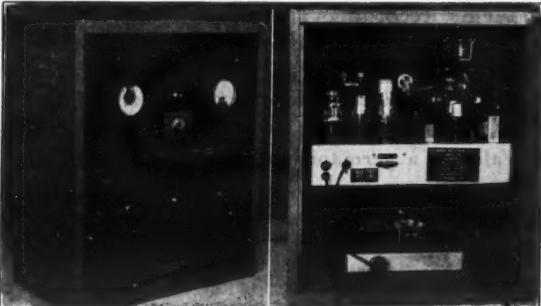
SCHUTTE & KOERTING CO., Dept. CP, Philadelphia 22, Pa.

When inquiring specify CP A3041 — see information request blank, pgs. 2-3

Metal Particles of 1/2 Gram are Revealed by Electronic Detector

Widely used in synthetic rubber plants and suitable for metal, chemical and food applications

Uses — This detector was originally designed for synthetic rubber applications. It was required that particles of ferrous metal as small as one-half gram be detected in bales



Detector operates on induction balance basis, detects ferrous, non-ferrous metals

of rubber seven and one-half inches thick. In addition to successfully operating in plants producing synthetic rubber these detectors perform well in many other applications: finished products that must be free of metal; unprocessed material can be automatically inspected for metal contamination; finished non-metallic parts which are to have metal parts inserted or moulded therein may be checked

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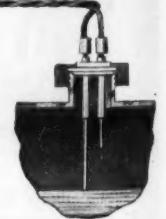
When inquiring specify CP A3042 — see information request blank, pgs. 2-3

these ELECTRONIC stainless steel FINGERS

Step Up Production
Reduce Waste and Loss

By Preventing

Overflow of tanks
Draining of boilers
Air binding of pumps
Burning out Boiler
tubes
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pots
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Just two polished stainless steel rods — that's all — in the vat, tank, boiler, processing kettle, freezer, pasteurizer, etc., to control signals or operate pumps or valves; they are constantly on duty — need no servicing — and are easy to install.

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Lumenite Electronic Company

ENGINEERS DESIGNERS MANUFACTURERS

407 S. Dearborn Street, Chicago 5, Ill.

When inquiring specify CP A3043 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

INSTRUMENTS

to determine if such parts have been included in product on operations. Liquid, plastic or solid raw materials; also food materials may also be examined.

Features — Great sensitivity. Ferrous and non-ferrous metals detected.

Description — The detector is of electronic design operating on an induction balance basis for detection of metallic contamination, protecting products and machinery. Extremely sensitive detection coils housed in moisture resisting panels are rigidly attached to an operating standard. The coils are so spaced that material to be inspected passes between them. Disturbances caused by metal particles passing between the coils is transferred to amplifier-controller unit. A visual or audible signal results or stopping of operations Control section and amplifier unit are shown in illustration. Bulletin and complete details on request.

FEDERAL LABORATORIES, INC., Dept. CP, P. O. Box 268, Pittsburgh 30, Pa.

When inquiring specify CP A3044 — see information request blank, pgs. 2-3

Feeding Pump has Hydraulically Balanced Diaphragm

For heavy duty service; horizontal direct motor drive, one or two reagent heads as required



Proportioning pump—manually adjustable rate of feed against 5000 psi

These proportioning pumps are available with one reagent head for single-feed or two reagent heads for feeding two chemical solutions simultaneously.

Features — Corrosion-free materials are used in the construction of the reagent heads, which include an advanced type hydraulically balanced diaphragm. This diaphragm is actuated by piston displacement through a hydraulic fluid. Displacement is accurately measured by the piston in the cylinder. There is no mechanical connection or pressure differential against the diaphragm at any time. Packing flands are eliminated. Chemical solution is completely isolated from operating parts; nothing can leak or corrode.

Description — Micrometer stroke adjustment of the piston permits adjustment of rate of flow from zero to full maximum, while the machine is in operation, with accuracy of flow maintained throughout a range from minimum to maximum of 1:100. Motion is transmitted to the piston by an oscillating arm which utilizes full motor power without friction or vibration. Piston drive transmission assembly is sealed in a heavy duty cast iron housing, submerged in oil bath. Machine is equipped with Timken roller bearings. All types of motors can be supplied including drip, vapor, explosion and chemical-proof types. Five sizes — capacities from a few cc. per hour to 10 gallons per hour. Complete information on Type DEL Wilson Pulsafeeders on request.

LAPP INSULATOR CO., (Process Equipment Div.) Dept. CP, Le Roy, N. Y.

When inquiring specify CP A3045 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

JUST RELEASED — Data Book No. 1000

Giving Complete Data On

REPUBLIC PNEUMATIC TRANSMITTERS

Operating On the Force-Balance Principle

For the Measurement and

Control of

FLOW • PRESSURE • LIQUID LEVEL • DENSITY

WRITE FOR YOUR COPY TODAY

Republic Pneumatic Transmitters are devices for converting process variables, such as flow, liquid level, pressure or liquid density, into air pressures which vary proportionally with the process variables.

These air pressures become direct measures of process variables and can be conducted to remote locations by means of tubing. A gage or receiver connected anywhere in this transmission line can be graduated to permit direct reading of the measured variable. This pressure can also be used as the measuring impulse for the actuation of an automatic controller.

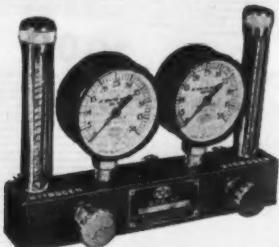
In this manner, measurement readings may be transmitted pneumatically to locations remote from the points of measurement, eliminating the necessity of running lead lines containing corrosive, inflammable, toxic or otherwise dangerous fluids into control rooms. The installation of flow, pressure, and liquid level measuring instruments, is immensely simplified through the elimination of long lead lines, and liquid legs, and the elimination or simplification of liquid seal and purging systems.

REPUBLIC FLOW METERS CO.

2240 Diversey Parkway, Chicago 47, Illinois

When inquiring specify CP A3046 . . . see information request blank, pgs. 2-3

AIRCO GAS PROPORTIONER



CONVENIENT... ACCURATE GAS MIXING DEVICE

Designed to meet the needs of chemical laboratories using non-corrosive and non-explosive gas mixtures for testing or manufacturing purposes, this new Airco development produces an accurately proportioned gas mixture at a pressure not in excess of 5 psi. For example, it is available with a complete line of flow-meters to permit flows of hydrogen from about 2 to 200 cft. and of nitrogen from about 6 to 140 cft. For full details, write today for descriptive folder (ADI-892). Address:

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Offices in all
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In Texas: Magnolia Airco Gas Products Co.

When inquiring specify CP A3047 — see information request blank, pgs. 2-3

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The
ROSS
Laboratory

Equipped to permit commercial tests practically reproducing actual field conditions, this fine modern Ross Laboratory is available to determine for you the best ways and means for solving industrial heating, curing and baking problems. After original development work has been completed. Consult us on this service.

Views showing some of our Laboratory equipment. Write for Brochure CP-1.



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BIRMINGHAM — ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

When inquiring specify CP A3048 — see information request blank, pgs. 2-3

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INSTRUMENTS

Multi-Range Tester for Meter Inspection, Laboratory Uses

Overall accuracy better than $\frac{1}{2}$ of 1%; vacuum control eliminates need of rheostats

Uses — In meter inspection departments. Produced with degree of accuracy to permit use in any department and all laboratories where instruments are used and performance must be carefully checked.

Features — Overall accuracy of better than $\frac{1}{2}$ of 1% — "metertester" is hand calibrated by the potentiometer standard cell method, on equipment conforming to Bureau of Standards requirements. The instrument has a basic sensitivity of 10 milliamperes.

Description — This is a multi-range instrument with self-contained regulated power supply and control equipment for use on 110-volts AC current, 60 cycles. It is composed of a stepless vacuum tube voltage control; a large $8\frac{1}{2}$ " mirror scale standard instrument and a decade of .1% accurate wire wound resistors. The range of the unit is 25 microamperes full scale. The sapphire jewels, "permo" alloy pivots Alnico magnet and sintered pole pieces assure longevity. The simple vacuum control uses a type 6N7 as a grid controlled variable resistor for complete and smooth control of the power to the standard 0-110 volts DC. This obviates the use of rheostats. The power supply is a conventional unit with a 6x5 full wave rectifier with a type VR150-OD 3 voltage regulator to the tubes. This serves to eliminate a large percentage of the fluctuations and readings caused by various line fluctuations. The complete unit is housed in a hand-rubbed solid oak carrying case.

MARION ELECTRICAL INSTRUMENT CO., Dept. CP, Manchester, N. H.

When inquiring specify CP A3049 — see information request blank, pgs. 2-3

Salt Fog Corrosion Test Cabinet

Conforms to official testing specifications; available in range of standard sizes

Uses — The salt fog test provides a standard by which coating resistance may be measured. Thus, the quality of such coatings can be certified and losses avoided by carefully checking production.

Features — Spray fog nozzle of atomizer is all Monel metal unit with Monel pick-up tubes supported by a Monel or corrosion resistant holder. The spray from the atomizer is baffled against the side wall of the cabinet so that at any time there is no direct impinging of the parts being tested.

Description — Water seal — A groove one inch wide and one and one half inch deep around top of cabinet is filled with water. When cover is lowered into waterproof groove a leakproof seal is created. Water itself is the insulator. A temperature control bulb relays the temperature within



Metertester for use on 110 v., AC, 60c.

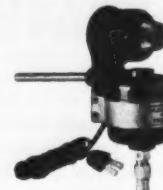
LABORATORY STIRRERS

With COMPLETE Speed Control

7005

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- Rheostat control from 0 up.
- Regular standard motor suitable for continuous service 110V.
- Plenty of power — will stir anything up to molasses.
- Fume resistant motor.
- Steel support rod.
- Can be clamped to any standard laboratory support.
- Rugged chuck — Cadmium plated for $\frac{1}{4}$ " rod.
- Operates on either A.C. or D.C. 110V.

Laboratory Apparatus and Supplies of all Kinds

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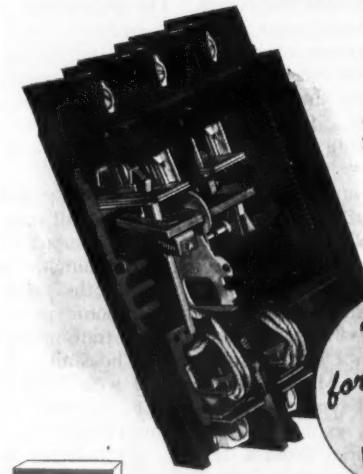
81 READE STREET, NEW YORK 7, N. Y.

When inquiring specify CP A3050 — see information request blank, pgs. 2-3

A New and Improved 100-AMPERE FRAME CIRCUIT BREAKER

TYPE ML2

15-100 Amperes,
600 Volts AC;
50-100 Amperes,
250 Volts AC-DC.



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ML2
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When inquiring specify CP A3051 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

INSTRUMENTS

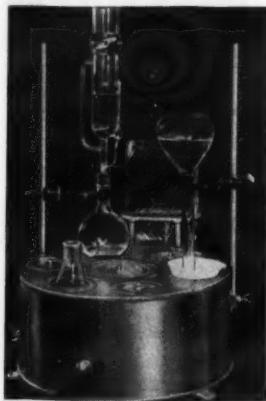
the cabinet to the control instrument. Temperature can be controlled to within 2 degrees plus or minus. Test work may be suspended from rubber covered angles or placed across if desired. Cross pieces are angle shaped and insulated against corrosion. The thermostatic control cabinet has instrument set at 95° F. at factory. Temperature within cabinet maintained by controlling heaters in the outside jacket or water compartment. Vapors can be dispersed through exhaust outlet at end of test before cover is raised. The 500 watt heaters are for single phase current and can be supplied for either 115 or 230 v. operation. Heaters are placed at the bottom between the inner and outer shell. Temperature is maintained inside the cabinet by convection of heat through the inner wall. The saturator tank is equipped with an immersion heater for temperatures of 100° — 200° F. As the water passes through this tank it is cushioned for steady volume. The atomizer is set for proper consumption of salt solution according to size of the particular unit. The equipment is offered in a range of sizes. Compressor suitable for constant duty is operated by 1/3 HP motor. Cabinet without compressor if desired. Complete information on request.

AMERICAN TECHNICAL CO., Dept. CP, 532 Addison St., Chicago 3, Ill.

When inquiring specify CP A3052 — see information request blank, pgs. 2-3

Electrically Heated Portable Water Bath

Bottle feed operates more than 10 hrs. on low heat; 4-5 hrs. on high heat



Water bath with automatic bottle feed

Description — Measurements are: diameter 15", height of body 7", height to top of bottle 15". Bench space of 18" x 21" is required. By using distilled water in bottle, scale formation may be prevented inside the bath. Rubber hose connectors are provided for continuous operation from running water supply if desired. The test tube holder has 14 holes of $\frac{5}{8}$ " diameter for tubes. Openings in concentric covers range from 1 $\frac{3}{16}$ " to 5 $\frac{3}{16}$ " in 1" intervals. The rod clamps save working space when setting up for extractions, concentrations, etc.

BARNSTEAD STILL & STERILIZER CO., INC., Dept. CP, 4 Lanesville Terrace, Forest Hills, Boston, Mass.

When inquiring specify CP A3053 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945



"Stepless" INPUT CONTROL!

In addition to providing your laboratory and shop with reliable facilities for fast, accurate metallurgical tests, chemical analyses and many other jobs requiring temperatures up to 2000° F., the famous Lindberg Box Furnace with "Stepless" Input Control soon pays for itself in current saved.

During a recent test this furnace consumed only 60.3 kilowatts of current, maintaining a temperature of 1650° F. for seven days. Operating under the same conditions for a like period with the conventional rheostat required 110 KW of current. At Chicago rates this saving of 50 KWH per week would amount to \$72.80 in one year.

The "Stepless" Input Control, enclosed in a separate metal case with an Indicating Pyrometer, employs a synchronous motor to automatically make and break the current. This supplies just the right amount needed to maintain an EXACT temperature level. The need for a wasteful rheostat is entirely eliminated. The control can be mounted conveniently near furnace and power lines.

The heavy one-piece, rod-type nickel chromium

elements are simple and easy to replace as the use of nuts and bolts is eliminated. A built-in transformer for low voltage current materially prolongs element life. The door is of a modern counterbalanced, vertical-lift design that keeps the hot side away from the operator.

Along with remarkable savings in current consumption, installation and maintenance costs are also unusually low.

Your laboratory equipment dealer will be glad to supply you with complete information on this reliable Lindberg Box Furnace today. Also ask him about Lindberg Combustion Type and Pot Crucible Furnaces as well as Lindberg Laboratory Hot Plates.

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WELL KNOWN THROUGHOUT THE WORLD AS
LEADERS IN DEVELOPING AND MANUFACTURING
INDUSTRIAL HEAT TREATING EQUIPMENT

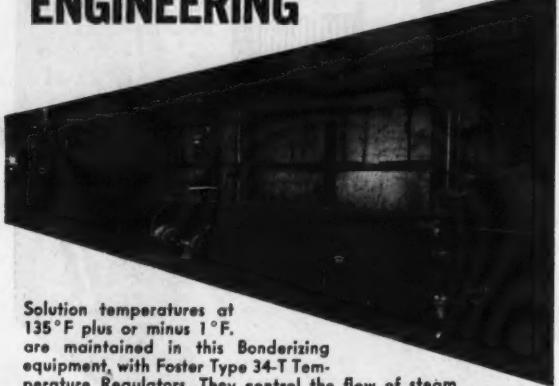


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When inquiring specify CP A3054 . . . see information request blank, pgs. 2-3

Page 31

135°F ± 1°F
Through
FOSTER
REGULATION
ENGINEERING



Solution temperatures at 135°F plus or minus 1°F, are maintained in this Bonderizing equipment, with Foster Type 34-T Temperature Regulators. They control the flow of steam to the heating coils immersed in the tanks. The work is carried through the tunnel in the background, where it is successively sprayed with solutions, which drain back into the tanks. Close control of solution temperature is essential to continuous automatic operation.

It's an easy matter to select the right temperature regulator, when you have the complete Foster line to choose from. For Foster Regulation Engineering assures the simplest trouble-free installation — by making available a temperature regulator tailored to each type of application — by selecting the one exactly fitted to your needs — and by assisting on sound installation practice.

In the Bonderizing installation illustrated, the problem was to hold solution temperatures as close to 135°F. as practical without unnecessary complication. The Foster Type 34-T was selected from the entire Foster line because it is a simple basic unit capable of holding temperatures to within 1°F plus or minus. Elaborate layouts and complicated equipment were avoided, because, in this case, the 34-T fits the job.

Foster Regulation Engineering insures satisfactory performance, cuts cost and saves maintenance time.

Foster Temperature Regulators — for steam, air, liquids and gases — are available for pressures up to 450 p.s.i. and temperatures to 300°F. Temperature adjustment range of 110°F and regulation accuracy of ± 1°F are available in the line. For complete details, ask for Bulletin 11.

★ BUY VICTORY BONDS ★

FOSTER ENGINEERING
Company

124 MONROE STREET • NEWARK 1, N. J.
 THERE IS NOW A FOSTER VALVE FOR EVERY SERVICE
 11-FE-9

When inquiring specify CP A3055 — see information request blank, pgs. 2-3

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INSTRUMENTS

Compact Water Analysis Cabinet

Junior model for breweries, distilleries, and chemical processing plants

Uses — This compact, but completely equipped test kit for water analysis makes essential tests possible for hardness, alkalinity to P & M and Chloride for maintaining suitable boiler feed or process water conditions.

Features — This new cabinet is in effect a simplification of maker's large "Testmaster" retaining the larger model's features and major functions.

Description — The small cabinet contains in one practical arrangement complete arrangement for making the tests mentioned. When it is desired to incorporate wide range pH determinations and Phosphate determinations, this smaller cabinet is so designed that without modifications, it will accommodate Phosphate tray and pH test unit. This unit is thus potentially available for all normal water control tests except dissolved oxygen.

TRU TEST LABORATORIES, INC., Dept. CP, 261 S. 3rd St., Philadelphia, Pa.

When inquiring specify CP A3056 — see information request blank, pgs. 2-3

Electronic AC Voltage Regulator

No moving parts in regulator; models for loads of 40 to 2000 watts; Rack mounting or cabinet

Uses — These electronic AC voltage regulators provide a means of automatically maintaining constant AC voltage supplied to equipment. With line voltage fluctuating over

"Anets" LABORATORY CABINETS

Automatic Control

"E" for EXCELLENCE

The same excellence of workmanship in close tolerance manufacture of electronic equipment that merited the Army-Navy "E" award for Anetsberger Brothers is built into every Anets Laboratory Cabinet.

These same cabinets enabled leading manufacturers to maintain the high precision control of processing and fabrication that won them extra stars in their Army-Navy "E" flag. Write for Bulletin No. 170 describing this indispensable equipment.

- ★ Testing electrical units under controlled conditions
- ★ Incubation, germination and bacterial culture
- ★ Processing fabrics, plastics, metals, wood
- ★ Weathering. Moisture absorption control, etc.

ANETSBERGER BROS.

When inquiring specify CP A3057 — see information request blank, pgs. 2-3

OHMITE Rheostats

*Insure Permanently Smooth
 CLOSE CONTROL
 For All Applications*

10 Sizes from
 1000 Watt 12" Dia.
 to 25 Watt 1 1/2" Dia.
 in variety of types
 to meet every need.
 Stock or Special Units.
 Write on company letter-
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Be Right with **OHMITE**
 RHEOSTATS • RESISTORS • TAP SWITCHES

When inquiring specify CP A3058 — see information request blank, pgs. 2-3

Skilled Hands

**IN ALL TYPES
 OF INDUSTRIES
 RELY ON
 PALMER**

PALMER "Red-Reading-Mercury" Thermometers are created by the skilled hands of Master Craftsmen, who produce Instruments for Temperature Indication and Recording, that are dependably accurate. . . . ALWAYS.

Easier reading, lower maintenance and rugged construction are the reasons WHY engineers all over the world specify PALMER. Let us help you solve any Temperature problems.

(Write for catalog)

THE PALMER CO. Mfrs.

Industrial Laboratory, Dial & Recording Thermometers
 2519 Norwood Ave., Cincinnati, Newwood, O.
 Canadian Plant: King & George Sts., Toronto

When inquiring specify CP A3059 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

INSTRUMENTS

a range of from 95-130 volts, the output of the regulator unit is automatically retained to within $\frac{1}{4}$ of one percent of desired value. Output voltage of the regulator can be set anywhere between 110 and 120 volts.

Description — Automatic voltage control is accomplished by electronic means, and there are no moving parts in the regulator. Since the regulators are not of the resonant type, they are not affected by frequency variation in the line voltage of as much as 1%. Similarly, the regulators are not affected by wave form distortion in any considerable amount. Maximum distortion of the output wave is less than 5%. Regulators for 60 cycle application are available in various models to control loads from 40-2000 watts. The 60 cycle models are constructed for rack mounting. The chassis is fastened to a standard 19" relay rack panel and a metal protective cabinet is also furnished for housing the regulator where it is not desired to use rack.

SORENSEN & CO., INC., Dept. CP, 375 Fairfield Ave., Stamford, Conn.

When inquiring specify CP A3060 — see information request blank, pgs. 2-3

Hermetically Sealed Electrical Indicating Instruments

Include voltmeters, ammeters, milliammeters and microammeters, both AC and DC



Hermetically sealed milliammeter

Uses — These new hermetically sealed electrical indicating instruments with internal pivot construction are available in 2 $\frac{1}{2}$, 3 $\frac{1}{2}$ and 4 inch round styles. These instruments include voltmeters, ammeters, milliammeters, and microammeters, both AC and DC, as listed in American War Standards specification C39.2.

The 4 inch round instruments are for use in radio service equipment where several scale arcs are required and have a body diameter of 3 $\frac{1}{2}$ ", flange diameter 4 $\frac{1}{2}$ ", taking mounting hole radius 1 15/16".

Features — All sizes are housed in metal cases, hermetically sealed by a clamping mechanism which guarantees a permanent air-tight joint. All are sealed from the top under pressure by means of clamping rings. Their vacuum seal excludes all moist air which might cause condensation on moving parts. They can also be sealed with dry air at sea level pressure or inert gas.

Description — Dimensions are in accordance with War Standards Assn. Drawings C.39.2-1 and C.39.2-2. Cases are Parkerized and black enameled. Their flint hard glass withstands 25 lbs. pressure per sq. inch. Gaskets are of synthetic rubber permanently locked to prevent pressure flow loosening. Instruments are vacuum and pressure tested under water. Terminals are of special glass soldered-in type, using a direct bond of glass to metal. Movements are of internal pivot construction for longer life and resistance to shock and vibration. Instruments are especially designed to withstand high heat and operate properly at 85° C. High strength Alnico magnets are used. Steel case shields against influence of magnetic fields to permit same meter to be used on steel panels as insulating panels.

HICKOK ELECTRICAL INSTRUMENT CO., Dept. CP, 10567 Dupont Ave., Cleveland 8, Ohio.

When inquiring specify CP A3061 — see information request blank, pgs. 2-3



Helping Hands... for You

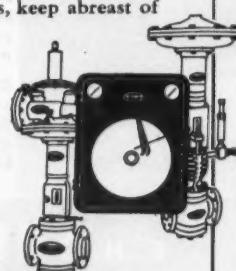
Ever since 1882, Mason-Neilan has pioneered in the development and manufacture of quality regulators and controls for the process and other industries. With this background of 63 years, Mason-Neilan approaches your problem with the benefits of its comprehensive experience, design engineering knowledge and complete manufacturing resources.

Our specialized engineering department, field engineer and research departments... second to none... are actually helping hands for you. They will not only continue to offer improvements in products, keep abreast of and anticipate the requirements of industry with new process controls and equipment, but will also lay out your pressure regulator, control valve, instrument needs... and where necessary — supervise the complete installation of Mason-Neilan equipment to assure proper operation.

Naturally, all this costs money, which is reflected in our selling price to you. However, we are firmly convinced that

our future — in fact, the future of your industry and ours — depends on constant improvement and development of processes and control equipment. This is why our policy is and will continue to be that... *Masoneilan equipment shall be built up to the job... not down to a price.*

No matter what your control problems, we suggest you make use of Mason-Neilan's extensive engineering facilities. They are available without obligation of course.



**MASON-NEILAN
REGULATOR COMPANY**
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New York • Philadelphia • Pittsburgh • Cleveland
Chicago • Tulsa • Atlanta • St. Louis • Houston
Los Angeles • San Francisco
Mason Regulator Co. of Canada, Ltd., Montreal, Canada

Masoneilan equipment—Built up to the job... not down to a price

When inquiring specify CP A3062 . . . see information request blank, pgs. 2-3

● B/W Controls were created in 1933, for positive, dependable liquid level control.

B/W Controls have no floats—no vacuum tubes—no moving parts in the liquid. They are unaffected by pressures, temperatures, acids or caustics.

They control variations in levels from $\frac{1}{4}$ " upward, and the relay may be located any distance from the electrodes. Invaluable pump protection against falling water table.

CATALOG 145 gives complete information. Write for it.

B/W CONTROLLER CORPORATION

2204 E. Maple Road, Birmingham, Mich.

When inquiring specify CP A3063 — see information request blank, pgs. 2-3

INSTRUMENTS

Counting, Timing, Recording Devices

Eight page catalog lists stroke and revolution counters, electric counters, coil winding counters and predetermined electric counters with application information and numerous illustrations. Copy will be mailed on request.

PRODUCTION INSTRUMENT CO., Dept. CP, 702-04 West Jackson Blvd., Chicago 6, Ill.

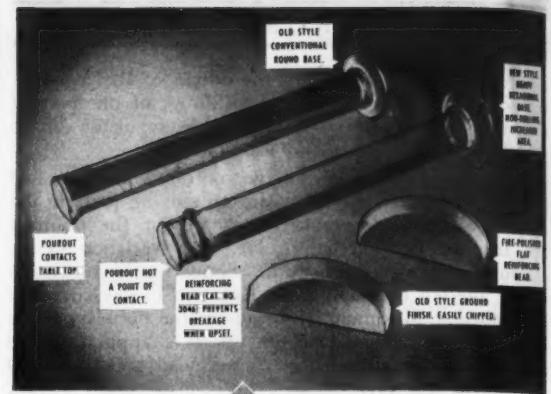
When inquiring specify CP A3064 — see information request blank, pgs. 2-3

Low Temperature Test Chamber

For studying metallurgical methods, instrument calibration, food processing research and for general laboratory use

Uses — This test chamber operates automatically to facilitate all type and life tests of products which are affected by extremes of temperature, pressure and humidity at low temperatures, high altitude, and humidity conditions. Developed during war for test of airborne electronic equipment and aircraft instruments they now offer advanced features valuable in studying food processing methods, metallurgical methods, instrument calibration, thermodynamic problems and in general laboratory use.

Description — Model NL 945 — (1) has a temperature range of minus 100° F. to plus 200° F. and will dissipate 1 kw of heat input at minus 100° F. The vacuum range is sea level to 80,000 feet and humidities are 15% to 95%. The internal dimensions of the clear test space are 24"x24"



Corning's "Know How" Spells Progress

Each new development in laboratory glassware pioneered by Corning Glass Works has not come as the result of chance. On the contrary, the knowledge and skill accumulated over the years—the "know how" in glass technology, in design and in fabrication techniques—have inevitably resulted in progressive advancements and refinements in laboratory glassware.

Trained technicians and highly skilled craftsmen at Corning are ever on the alert to apply their "know how" to produce laboratory glassware of uniformly high quality to meet the demands of industry and science. These men understand laboratory glassware—the balance of properties obtainable in specific compositions—the thermal and mechanical endurance which can be designed into the ware—and fabrication techniques which assure high quality, enduring performance and economic costs.

Users and Laboratory Supply Houses have played an important role in helping Corning to apply its "know how" to the development of new and fine laboratory glassware. Their constant interest and cooperation have been extremely helpful in furthering Corning's efforts into fields of development which might otherwise have been overlooked. Their enthusiasm and encouragement have generously benefited both industry and science.

"PYREX," "PYCOR" and "CORNING" are registered trade-marks and indicate manufacture by CORNING GLASS WORKS • CORNING, N.Y.

PYREX BRAND LABORATORY GLASSWARE

GOING
means
Research in Progress

When inquiring specify CP A3066 — see information request blank, pgs. 2-3

Sheldon

... since 1898

LABORATORY AND VOCATIONAL Furniture

Planning a laboratory is not merely a matter of selecting equipment, but a task that demands a high and specialized type of creative understanding, skill, and long practical experience. Only complete integration of every part, invisible as well as visible, can achieve maximum utility.

SHELDON planned laboratories for research and control are a matter of public record. What we have done for others is a dependable index of what we can do for you. We'll be happy to work with you.

E. H. SHELDON & COMPANY
MUSKEGON, MICHIGAN

When inquiring specify CP A3065 . . . see information request blank, pgs. 2-3



BULLETINS TELL THE WHOLE RELAY STORY

Bulletin 105—"Little Giant Relay" single pole, single and double throw. Controls $\frac{1}{4}$ HP on 115-230V.

Bulletin 106—"Midget Relays" for light duty available in single and double pole, single and double throw.

Bulletin 81—"Intermediate Duty Relays" in single and multipole arrangements, single and double throw.

Bulletin 362—"Motor Driven Time Delay Relays" for operation on alternating current.

Bulletin 104—"Midget Relay" for light

places—Vibration resistant—Double Pole, Double Throw—Available for 6 to 115 volts A.C. or D.C.

Bulletin 131 and 132—"Heavy Duty Relays" single and multipole, single and double, contacts rated up to 25 amp. on 125-250V.

Bulletin 231—"Sensitive Type Relays" for direct and alternating current operating on .014 watts.

Bulletin 351—"Thermal Time Delay Relays" with thermostat built into relay assembly.

Bulletin 103—"Aircraft Power Relay. Single Pole, Single Throw for 24 volts at 25 amps. D.C. Withstands high values of acceleration of gravity, shock, and vibration.

WARD LEONARD RELAYS include types and sizes for every application. They all have crisp action, are dependable and durable yet consume but little current. Send for the data bulletins of interest to you.



WARD LEONARD

Electric control devices since 1892

Offices in all principal cities

WARD LEONARD ELECTRIC COMPANY
92 SOUTH ST., MOUNT VERNON, N.Y.

When inquiring specify CP A3067 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

INSTRUMENTS

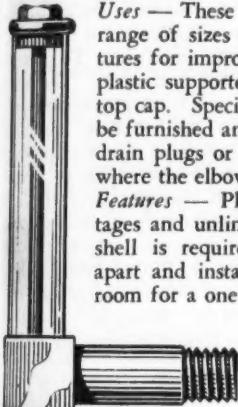
124". The unit is equipped with electrical test connections from the exterior to the interior and other useful accessories. All refrigeration machines, vacuum pump, etc. are contained under the test space and are fully automatic. Model N — 845 (1) is identical but omits vacuum and humidity features.

NORTHERN LABORATORIES, LTD., Dept. CP, 3-01 27th Ave., Long Island City, N. Y.

When inquiring specify CP A3068 — see information request blank, pgs. 2-3

Plastic Sight Oil Gauge Easily Installed in Limited Space

Taken apart for cleaning and easily placed where one piece gauges could not be screwed in


Uses — These oil gauges offered in a complete range of sizes and styles incorporate new features for improved service such as unbreakable plastic supported by a heavy central stem and top cap. Special height and length gauges can be furnished and also available are gauges with drain plugs or straight gauges for applications where the elbow type is not suitable.

Features — Plastic sight offers safety advantages and unlimited visibility, as no protective shell is required. The gauge can be taken apart and installed where there is insufficient room for a one piece gauge.

Description — The gauge body is extremely sturdy and made of brass. The assembly is securely locked with an independent nut compressing the cork gasket, eliminating any leakage. Standard sizes cover a range of 1 1/4" to 5" and slight diameter of 1/2" to 1" with stock threads of 1/8", 1/4", 3/8", 1/2" NPT. Complete details on request.

OIL-RITE CORP., Dept. CP, 3461 South 13th St., Milwaukee 7, Wisconsin.

When inquiring specify CP A3089 — see information request blank, pgs. 2-3

New Tracer for Greater Ease and Efficiency in Roughness Testing

Used on Profilometer for all outside diameters; inside diameters to 1/4 inch

Uses — The range of "Profilometer" equipment is greatly increased by this new tracer in measuring rough surfaces. **Features** — This represents a considerable advance in design.

Description — Used in conjunction with the Profilometer, versatility, efficiency and convenience with which measurements may be made are increased. This type AW tracer may be used to measure the roughness of surfaces on all outside diameters and on all inside diameters down to 1/4 inch. No adaptations of the equipment are necessary to use the type AW tracer with all types of Profilometers now in use. Complete information regarding this instrument and the new tracer Number AW on request.

PHYSICISTS RESEARCH CO., Dept. CP, Ann Arbor, Mich.

When inquiring specify CP A3070 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945



One of the largest glass ware manufacturers uses a Hevi Duty 5610 Alloy 10 High Temperature Furnace in routine control analysis to replace blast burners formerly used for igniting precipitates. It improves the precision of the analysis by eliminating the possibility of mechanical loss from the burners and provides a higher, more uniform temperature than obtainable under the old method. Other uses and details of this furnace are in Bulletin HD-339 — send for your copy.

HEVI DUTY ELECTRIC COMPANY

TRADE MARK
LABORATORY FURNACES **MULTIPLE UNIT** ELECTRIC EXCLUSIVELY
REG. U. S. PAT. OFF.

MILWAUKEE, WISCONSIN

When inquiring specify CP A3071 . . . see information request blank, pgs. 2-3

**Send for This
New Booklet!**



This new, handy size (4" x 8") booklet lists and briefly describes not only the full line of the regular products of Reilly Tar & Chemical Corporation, but also many new and unusual materials, comprising a diversity of coal tar products unequalled by any other producer.

Write for your copy of this convenient
and helpful booklet.

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MERCHANTS BANK BLDG. + INDIANAPOLIS 4, IND.
500 FIFTH AVE. 2513 S. DAMEN AVE.
CHICAGO 16, ILLINOIS

* 17 Plants * 24 Sales Offices
To Serve the Nation!

Reilly COAL TAR PRODUCTS



New Materials

Lubricants Play Vital Part in New Plastics Forming Methods

Contribute to maximum efficiency in use of felt coated wooden molds in forming aircraft enclosures of crystal clear plastics

Uses — The new forming techniques discussed here were developed to meet stringent requirements in producing vision-true three dimensional aircraft sections. They embody the use of wooden molds coated with felt and lubricated with special lubricants.

Features — These forming methods have been used by a number of fabricators producing aircraft sections from "Lucite" and achieved smooth, distortion free surfaces. This is done in this socalled three dimensional forming by permitting the length, width and thickness of the sheet to be curved in any direction without disturbing the relative positions of the surfaces represented by these dimensions. The older method of forming employed a male and female die between which a heat-softened plastic sheet was pressed into shape. Contact of the softened sheet with mold surfaces often resulted in surface irregularities. New forming techniques overcome such distortions.

Description — Proper greases for forming dies provide lubrication so that the sheet will move over the dies surface freely during the shaping process. The grease must not cause any surface irregularities in the surface product. To do its work properly the grease should liquefy when the sheet touches it, but the grease should not become too thin as the result of heat transfer, so as to interfere with correct lubrication. Because of this, the grease should contain a high viscosity oil. Die lubricant should be easily removable by hand, either with a solvent which will not attack the resin or with warm water. Used in the operations referred to here are Esso Marketers Cazar Lubricant 2, 3886 Die Lubricant and 5215 Die Lubricant. First to adopt Cazar Lubricant 2 for "Lucite" die coating was DuPont Plastics Department, Arlington, N. J. It is now in use in other plants forming "Lucite." 3886 Die Lubricant and 5215 die lubricant were developed when DuPont sought to slash the time consumed in the solvent removal of Cazar lubricant 2 following the forming of more intricate pieces. 3886 die lubricant is in more general use, since it has a base oil similar in viscosity to Cazar 2. Applied in a thin film it stands up well under forming temperatures. Amber in color it has a worked penetration of approximately 250 and a melting point of approximately 300 degrees F. Identical in soap content 5215 has a lower viscosity base oil. One method used by DuPont



Wooden molds, coated with felt, form products from "Lucite"

for the shaping of cockpit canopies and other plane enclosures begins with the suspension of a sheet of "Lucite" in a hot air oven at 300 degrees F. The heating makes the sheet quite flexible. It is then clamped over a female ring and the male die coated with Cazar 2, is then placed in forming position by pressure. Following a cooling period, the formed piece is removed and cleaned of grease resulting from contact with the dies. Usually made of mahogany, the male die is precisely shaped to the contours of the three dimensional form to be fabricated. Its surface is covered with a 1/16 inch layer of high grade felt which acts as a cushion. Over this is applied an even coating of Cazar 2, which is partially absorbed by the felt. Frequently the dies are preheated by infrared lamps. As a result of this, there is often a tendency for the grease to penetrate through the felt to the wood die. To prevent this graphite grease must be applied to the felt. The main requirement in a grease of this type is an appreciable percentage of graphite, available in another Esso lubricant, Van Estan. Another forming technique for war production utilizes a grease coated female die made of dental plaster. The hot acrylic sheet is clamped over the felt covered and greased die cavity, and a vacuum draws down the thermoplastic material shaping it precisely to the die contour. At Rohm and Hass plant, Philadelphia, only a male die of wood or plaster and a vacuum pot are employed. A heated, flexible sheet of "Plexiglas" is placed over the top of the pot and then locked in place by a ring.



COUMARONE AND MODIFIED COUMARONE RESINS

The most complete line of coumarone and modified coumarone resins manufactured. Available in colors ranging from very pale amber to dark brown and in melting points from 5° to 160° C.

*Write to us for information on the use
of Neville Resins in your products.*

THE NEVILLE COMPANY
PITTSBURGH - PA.

Chemicals for the Nation's Vital Industries

INZOL • TOLUOL • XYLOL • TOLLAC • NEVSOIL • CRUDE COAL-TAR SOLVENTS
ASH SOLVENTS • COUMARONE INDENE RESINS • PHENOTHIAZINE • TAR PAINTS
THERMOPOLYMER COMPOUNDING MATERIALS • WIRE ENAMEL THINNERS • DIBUTYL PHthalATE
RECLAIMING, PLASTICIZING, NEUTRAL CRESOXYL, AND CHLORINE STAIN OILS.

When inquiring specify CP A3073 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

MATERIALS

A vacuum line is opened which causes the sheet to be pulled into the pot. The single die is then lowered into the pot and held a few inches away from the "Plexiglas." When the vacuum under the "Plexiglas" is released, the sheet snaps back against the die and is shaped by it. After 20 minutes the molded form has cooled and is removed. Complete information concerning die forming lubricants referred to here on request.

ESSO Marketers, Dept. CP, 26 Broadway, New York 4, New York.

When inquiring specify CP A3074 — see information request blank, pgs. 2-3

Data on Properties and Applications of Various Hydroquinone Products

A series of folders give essential data on Hydroquinone products. These are Hydroquinone Mono Methyl Ether (4 Methoxy Phenol). This is a white waxy solid, m.p. 53-54° C.; b.p. 241-243° C. solubility data — Gm/100 gm solution — water 4.0, acetone 88.4, ethyl acetate 86.4, ethyl alcohol 87.0, benzene 42.9. Uses include gasoline and rubber antioxidants, dyestuffs, stabilizers. It undergoes all the usual reactions of para-substituted monohydric phenols. Generally the methoxy group imparts unusual properties, such as increased solubility in animal and vegetable fats and oils. The ether link is very stable and is not effected by most reaction conditions. Hydroquinone Dimethyl Ether (1,4, Dimethyl Benzene) is a white waxy solid m.p. 53-55° C., b.p. 210-212° C. Solubility data: water 0.0, acetone 69.4, benzene 36.2, ethyl acetate 59.2, ethyl alcohol 22.8. Uses include dyestuffs, perfumes (melilot), plasticizers, weathering agents. It is very inert to both acids and alkalies; not being hydrolyzed even at boiling temperature. The methyl groups can be cleaved with anhydrous aluminum chloride but even this reaction is very slow. Nitration, bromination, and acylation can be carried out quite readily. It should also prove interesting as a high boiling inert solvent for chemical reactions. Hydroquinone Diethyl Ether (1, 4, Diethoxy Benzene) — white granular solid, m.p. 70-71° C., b.p. 234° C., Molecular weight 116.11; solubility data: water 0.0, acetone 39.7, ethyl acetate 35.1, ethyl alcohol 8.5, benzene 55.7. Used in perfumes, dyestuffs, pharmaceuticals, ultraviolet absorption, high boiling inert solvent. It is stable at elevated temperatures and does not hydrolyze readily even in boiling acids or alkalies. Anise-like odor. It suggests interesting possibilities for cosmetics and perfumes. These folders, together with other data and research samples on request.

TENNESSEE EASTMAN CORP., Dept. CP, Kingsport, Tenn.

When inquiring specify CP A3075 — see information request blank, pgs. 2-3

Liquid Chemical For Mixing With Cement to Make Mortar for Waterproofing, Bonding

Four page illustrated folder describes features and illustrates various applications of "Flexite" a liquid chemical used for mixing cement or cement and sand to make a mortar for many difficult jobs. It is suggested for use in stopping leaks against hydrostatic pressure, eliminating seepage, patching and waterproofing pits and concrete pipes. Its most frequent use is for stopping direct leaks in concrete, masonry and brick. Copies of bulletin entitled "How to Stop Leaks Without Removing Water Pressure," on request.

FLEXROCK CO., Dept. CP, Filbert & Cuthbert, West of 36th St., Philadelphia 4, Pa.

When inquiring specify CP A3076 — see information request blank, pgs. 2-3

Aroclors (chlorinated diphenyl), have such a wide range of properties that one of them can likely be developed for your product. Aroclors range from liquid to solid, colorless to black, plastic to friable, oily to adhesive, transparent to opaque.

Aroclors are produced exclusively by Monsanto and are designed to fit the particular needs of manufacturers. They have been used for such purposes as flame-retarding ingredients, plasticizers, nonflammable heat-transfer oils, softeners, solvents, solid plastics, lubricants, adhesives, organic pigments—and many others.

Your Product, too, May Have a Need for One of Monsanto's

AROCLORS

For samples of Monsanto's Aroclors and complete technical information, please write the nearest Monsanto office or **MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Cincinnati, Birmingham, Los Angeles, San Francisco, Seattle, Montreal, Toronto.**

* A DESCRIPTION OF AROCLORS

NONFLAMMABLE

The viscous Aroclor oils and the resins do not support combustion when heated alone even at their boiling points—temperatures above 350° C. Most of the Aroclors flux readily with resinous and pitch-like materials to give a product having a decreased fire hazard.

ELECTRICAL PROPERTIES

Aroclors have very interesting electrical characteristics; high dielectric constant, resistivity and dielectric strength, and low power factor.

SOLUBILITY

The Aroclor oils and resins are easily soluble in most of the common organic solvents and drying oils. All Aroclors are insoluble in water. Compatibility data on Aroclors in nitrocellulose lacquers will be sent on request.

ADHESIVENESS

The Aroclor resins adhere strongly to smooth surfaces—to glass and metal or to smooth varnished or lacquered surfaces. The Aroclor adhesives are thermoplastic; are readily applied hot without solvent; do not require high temperatures for easy application, and are set immediately upon cooling.

THERMOPLASTICITY

The Aroclors are permanently thermoplastic. They undergo no condensation or hardening upon repeated melting and cooling. The clear Aroclor resins are now being produced with softening points up to 110° C. The opaque crystalline solids are produced with crystallizing points up to approximately 295° C.

NONDRYING PROPERTIES

The Aroclors are nondrying, and when they are exposed to the air, even in thin films, no noticeable oxidation or hardening takes place. However, when used as ingredients of lacquers, they do not retard the rate of drying of the lacquer films.

STABILITY

The Aroclors are remarkably resistant to the action of either hydrolyzing agents or high temperature. They are not affected by boiling sodium hydroxide solution. Because of their stability to heat, the Aroclors are useful heat-transfer media.

ACTION ON METALS

The Aroclors are noncorrosive. Mild steel exposed to the action of Aroclor 1254 or Aroclor 1248 in a closed system at 325° C. (617° F.) for 848 hours showed no pitting and the corrosion rate, as measured in inches of penetration per year, was 0.0021.

MONSANTO
CHEMICALS
SERVING INDUSTRY...WHICH SERVES MANKIND

When inquiring specify CP A3077 . . . see information request blank, pgs. 2-3



SULPHO HAND CLEANER

will not defat the skin. It has been specially formulated for workers encountering solvents, and skin drying chemicals. Send for FREE booklet.



When inquiring specify CP A3078 — see information request blank, pgs. 2-3



MATERIALS

Coatings & Compounds From Synthetic Resins Include Caustic Resistant Butadiene Type

Forty page catalog gives complete information of "Heresite" plastic coatings, synthetic resins and molding compounds. "Heresite" is the name of a series of highly resistant coatings and related products, all formulated basically from the same synthetic resins manufactured by this organization. One of the initial sections of this catalog deals with "Heresite" baking type industrial coating. This group constitutes coatings of the heat hardening type; coatings that are pure phenolic resinoid compounds, free from all modifying agents such as drying or non-drying oils and cellulose materials. They are available in colors and different degrees of sheen or lustre. Application methods make possible the use of pure phenolics on a practical scale. Among these developments are metal preparations for steel, aluminum and plastic materials, spraying and dipping techniques and proper formulations to produce correct viscosities and solvent balances. Air drying coatings and butadiene type resin are also described in detail. This latter resin can be rolled into sheets and applied to the interior of tanks and large diameter pipes. It withstands the corrosive action of various liquids. Various industrial applications of these materials are discussed and illustrated. Also of interest is a laminating varnish and "Heresite RO-88 Resin". This oil soluble resin can be used with China Wood, dehydrated castor, linseed and processed soya bean oil. It is oil-reactive and produces vehicles that can be used to formulate enamels, electrical insulating varnishes and sea water resistant coatings. Copies on request.

HERESITE & CHEMICAL CO., Dept. CP, Manitowoc, Wis.

When inquiring specify CP A3079 — see information request blank, pgs. 2-3

LEAKPROOF JOINTS



CRANE PACKING COMPANY

1821 CUYLER AVE. - CHICAGO 13, ILL.
CRANE PACKING CO., LTD., MONTREAL, QUEBEC, CANADA
MONTREAL, QUEBEC, CANADA
ANGLIA NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH SAN FRANCISCO

When inquiring specify CP A3081 — see information request blank, pgs. 2-3

Furfural...the answer to many PROBLEMS...

Are You Looking for a SOLVENT?

Perhaps Furfural is the answer. Its success as a selective solvent in the petroleum industry, where it has been used for producing uniformly superior lubricants since 1933, is being duplicated in the production of synthetic rubber, where these same properties are facilitating the refining of butadiene. It is also extensively used for extracting both latent and visible color bodies in refined wood rosins, for glyceride oil separations, and other special solvent refining processes.

Are You Looking for a

RESIN-FORMER OR PLASTICIZER?

Perhaps Furfural is the answer. This versatile aldehyde has long been used in the production of resins through condensation with phenols; interesting new resins are being developed. Its properties as a resin-former and/or plasticizer are also being utilized in the manufacture of most resinoid-bonded products.

Are You Looking for a

DISPERSANT?

Perhaps Furfural is the answer. Its action as a solvent for resins — particularly phenolics, vinyls, cellulose derivatives and some natural resin esters — renders it useful in various resin application techniques. Its ability to dissolve paint, varnish and lacquer films contributes to its use as a paint remover.

Are You Looking for a

bigly reactive INTERMEDIATE?

Perhaps Furfural is the answer. This aldehyde, with conjugated double bonds, readily undergoes

many condensation, reduction and oxidation reactions with the formation of numerous interesting derivatives such as — furylethylene compounds, furan alcohols or open chain alcohols due to hydrogenolysis, and maleic and fumaric acids.

Other Uses for Furfural . . .

And if you are looking for a wetting agent or a bactericide, a penetrant or a fungicide, an insecticide or a herbicide — Furfural may help you make a better product.

Whatever you are looking for, consider Furfural. Our Technical Staff has compiled a wealth of information on Furfural, its derivatives and the literature on the Furans. We are ready to help in applying Furfural to your problems.

Ample Supply Available

Despite huge war demands for Furfural, all critical requirements were supplied. Now that the war is over, stocks of Furfural are ample and steps have been taken to keep production facilities ahead of increasing demands.

PROPERTIES OF QUAKER FURFURAL

(Furfuraldehyde, C_5H_8O-CHO)

Amber-colored liquid of high stability and unusual purity

Molecular Weight.....	96.08
Freezing Point, °C.....	-37
Boiling Range (99%) °C.....	157 to 167
Specific Gravity (20/20°C).....	1.161
Flash Point (open cup) °C.....	56
Refractive Index (20/D).....	1.5261
Surface Tension (dynes/cm).....	.49
Viscosity at 38°C (centipoises).....	1.35

Solubility: Completely miscible with ethyl alcohol, ether, acetone, benzyl, butyl acetate, china wood oil and most organic solvents except petroleum hydrocarbons and glycerol; 8.13% by wt. in water at 20°C.

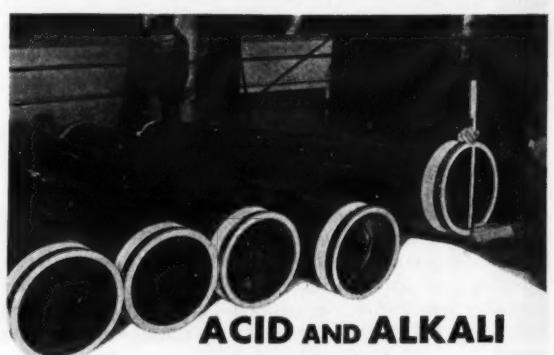
Analysis:

Furfural, minimum %.....	*99.5
Water, maximum %.....	.2
Organic Acidity, Maximum equiv/l.....	0.023
Ash, maximum %.....	.006
Mineral Acidity.....	None
Sulfates.....	None
Ketones.....	None

*As determined by A.O.A.C. method.

Standard Containers: 9, 45, 90, and 520	lb. Drums
Carload of Drums 80 to 88.....41,600 to 45,760 lbs.
Tank Car 8,000 gal.....75,000 lbs.
Tank Car, 10,000 gal.....95,000 lbs.

*ODT requires maximum loading



ACID AND ALKALI RESISTANT

HAVEG is a molded plastic, which is completely resistant to most acids or alkalies. Its chemical resistance is uniform throughout its entire mass. It is not a lining or coating.

HAVEG Chemical Equipment is made in standard tanks, pipe, towers, fittings, valves, fume duct and related items, also a variety of special equipment.

Send for Bulletin F3 which gives complete design, engineering and application data.

HT-43



When inquiring specify CP A3082 — see information request blank, pgs. 2-3

The Quaker Oats Company

CHEMICALS DEPT.

1930 BOARD OF TRADE BLDG.
141 W. JACKSON BLVD., CHICAGO 4, ILLINOIS

MATERIALS

Wrinkle Finishes for Fabrics, Paper Require no Cooking

Formulation by straight mixing of components; greatly increased flexibility, pliability

Uses — These "Wrinkle" finishes used extensively on metal and other materials which would stand baking temperatures in excess of 200 degrees F. become even more versatile in the coating process field through the introduction of a new formula employing rubber, embodying features particularly applicable to coating paper and fabric and other flexible materials.

Features — After its original introduction this type of finish was used almost exclusively on metals, etc. A flexible coating containing the characteristics which had made wrinkle finishes popular on rigid materials was later developed for paper, leather and fabrics. This flexible coating should be dried after application in temperatures as low as 130 degrees F. The new synthetic rubber "wrinkle" finish is important in three particulars: (1) It is more flexible than previous formulations, ranging to the extreme in flexibility and pliability. (2) The surface patterns are of far greater variety than have been previously obtained. (3) Formulations by straight mixing of components — no cooking required. Particularly adaptable to products susceptible to scuffing or scratching.

Description — This synthetic rubber "wrinkle" coating consists of two components which are compatible with each other; however with initial drying or film forming period, these ingredients separate into distinct phases and thereby the texture of the wrinkle pattern is altered depending on the relative proportion of the components. The pattern may also be varied according to the elastomer used, by varying the time or temperature during the drying period, and by a choice of methods of application. This development is not limited to any single type of synthetic rubber. Particularly interesting results have been obtained with copolymers of butadiene and styrene, and of butadiene and acrylonitrile. Polyvinyl chloride and neoprene have also been used successfully. Flexible finishes which have been produced recently from the latex formulations range from a fine suede to heavy embossed patterns. All these finishes may be applied to metal, wood, glass, porcelain, chinaware, paper, cardboard, fabrics and leather. Application may be by spraying, rolling, spreading or dipping. Drying may be in either gas or infrared ovens. "Wrinkle" finishes are produced by some 200 licensed manufacturers.

NEW WRINKLE, INC., Dept. CP, 1771 Springfield St., Dayton 3, Ohio.

When inquiring specify CP A3083 — see information request blank, pgs. 2-3

Materials of Chemical Construction

Comprehensive catalog covering a variety of materials of chemical construction, including acid-proof cements, plastic linings, jointing materials and protective coatings features "Alkor", a new alkali and acid proof cement of the maker's "Korez" series. This has been developed to meet requirements for a cement that is inert to all alkalies regardless of concentration. It is also inert to solvents, greases, oils and acid except the highly oxidizing ones. Copies on request.

THE ATLAS MINERAL PRODUCTS CO., Dept. CP, Mertztown, Pa.

When inquiring specify CP A3084 — see information request blank, pgs. 2-3

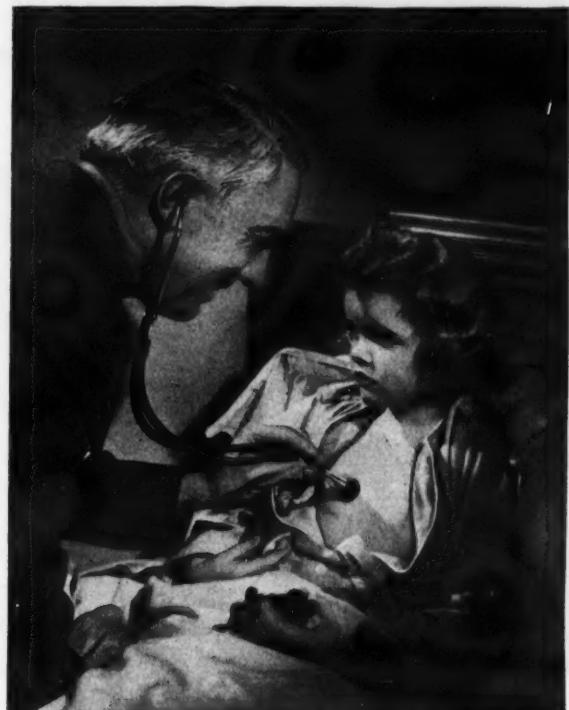
NOVEMBER-DECEMBER, 1945



Proved in Food Products! C. P. glycerine is a food itself, substantially equivalent in food value to carbohydrate. It has high sweetening power. No wonder it's used by so many manufacturers!



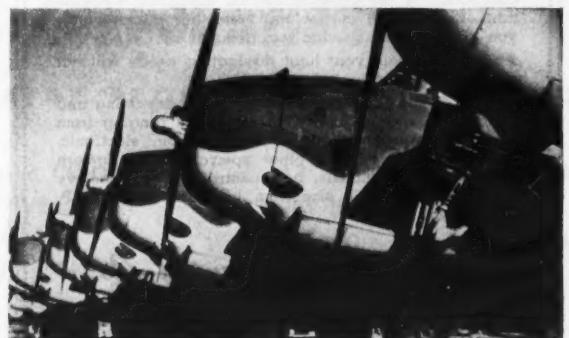
Proved in Cosmetics! C. P. glycerine's non-toxicity, emollient properties, resistance to evaporation, solvent power, and compatibility make it ideal for use in many cosmetics. Use glycerine!



Proved in Medicines! C. P. glycerine, used as a solvent, carrier, and component of ointments, emollient solutions, plasters, and many other pharmaceuticals, is an old standby — proved safe.



Proved in Packaging! Because C. P. glycerine is non-toxic, it is used in the manufacture of transparent wrappings coming in contact with foods or food products. Use glycerine—and be sure!



Tough Paints! Long-lasting paints for war equipment and for widespread industrial and home use have been made possible with alkyd resins, of which glycerine is an important raw material.

When inquiring specify CP A3085 . . . see information request blank, pgs. 2-3

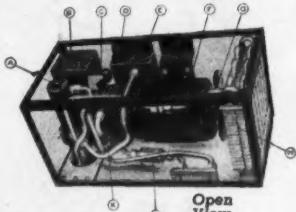
EASTERN HEAT DISSIPATING UNIT

The Eastern Heat Dissipating Unit is used in connection with television, radar, short wave radio communications, high pressure mercury lamps, X-Ray tubes, induction heating units, and many other applications. It was developed for military requirements in conjunction with radar and electronic tube cooling problems. Units were designed in various sizes and capacities, some with the close heat control range of 2 degrees C. Used successfully for ground, water and airborne service, they combine rugged construction, compactness and light weight.

The model illustrated will dissipate up to 1200 watts with a constant controlled temperature, irrespective of surrounding temperatures, within 2 degrees C. It is complete with Thermostat control, Thermostatic valves and flow switch. Eastern has built airborne units of much smaller sizes and industrial units of much larger sizes and capacities. The specifications for the unit shown are: SIZE: 16" x 7½" x 7½"; METALS: Steel, Bronze, or Aluminum. Other models can be designed to dissipate up to 5000 watts.



Closed View



A. Thermo. B. Reservoir
B. Reservoir
C. Flow Switch
D. Thermostat
E. Auxiliary Heater
F. Motor
G. Fan
H. Radiator
J. Filter
K. Pump

Eastern's experience in solving heat control problems, especially where compactness and light weight are necessary, makes them the logical people with whom to discuss heat control applications. If you are designing or planning to build equipment that calls for heat dissipation or the close control of operating temperatures, Eastern will design and build the entire unit for you to meet your specific requirements.

An inquiry about your heat dissipating needs will not obligate you in the slightest.

A large part of Eastern's business is the designing and building of special pumps, in quantities ranging from 25 to several thousand for the aviation, electronic, chemical, machine and other special fields. Eastern builds over 600 models, both centrifugal and positive pressure, ranging in size from 1/100 H.P. to ¾ H.P. as standard units.

Eastern Engineering Co.

49 FOX STREET NEW HAVEN 6, CONN.

When inquiring specify CP A3088 — see information request blank, pgs. 2-3

Page 40

MATERIALS

Wetting Agent: Textile, Cosmetic, Processing, Cleaning Compounds

Aqueous solutions have low surface tension and lather freely

Uses — Wetting agent for textile processing, shampoo, emulsifying agent in cosmetics, dry cleaning compounds. **Features** — Effective wetting, emulsifying agent; light in color and liquid at room temperature. Aqueous solutions have very low surface tension and lather freely.

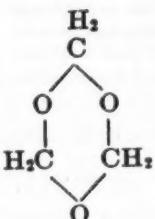
Description — Pale yellow liquid with density of 0.98. Faint, pleasant odor. Forms clear, aqueous solutions containing up to 36% of the agent, which is named "Lorridol". Miscible in alcohol, glycerine, vegetable oils, carbon tetrachloride, cyclohexanol and petroleum ether. pH of 5% aqueous is 8.7. Surface tension of 1% aqueous at 25° C. is 24.4 dynes per centimeter.

THE BEACON CO., Dept. CP, 97 Bickford St., Boston 30, Mass.

When inquiring specify CP A3087 — see information request blank, pgs. 2-3

Trioxane-Stable, Cyclic Polymer Of Formaldehyde

Used as source of formaldehyde with better control of reaction, better control of the quality, uniformity formed; better yields



Uses — Solubility of trioxane in most types of organic materials makes possible its use as an intermediate in organic reaction media. In such anhydrous media trioxane is stable if the system is neutral or alkaline. Small amounts of strong acids or acid forming materials cause it to depolymerize to monomeric formaldehyde at a rate that may be readily controlled by regulating the amount of catalyst and the temperature. Thus, trioxane can be added to a given reaction mixture to form a system that is stable until the necessary catalyst is added to cause depolymerization. These properties make it possible to use trioxane as a source of formaldehyde for reaction with better control of reaction, better control of quality and uniformity of the product formed, better yields, shorter reaction time, and a generally smoother reaction than, in many cases, is possible with aqueous formaldehyde solutions or other formaldehyde polymers. It is suggested that trioxane's solvent and solubility properties will make it useful as a plasticizer for other materials in cases where its volatility is not objectionable. Trioxane-zein compositions, for example, are believed to have potential applications in coatings and as plastic masses. Trioxane ignites instantly and burns with a very hot non-luminous clean, odorless flame. This property suggests the use of trioxane as a fuel.

Description — Trioxane is a stable, cyclic polymer of formaldehyde. It has previously been designated as alpha-trioxymethylene. It should not be confused with "Trioxymethylene" which latter term as used in technical literature, refers to paraformaldehyde or the higher polymers of formaldehyde known as polyoxymethylenes. Solubility: readily soluble in alcohols, ketones, ethers, esters, chlorinated hydrocarbon solvents and aromatic hydrocarbons; difficultly soluble in pentane and petroleum ether; gives 20% solution in water at 20° C., infinitely soluble in hot water. Molten trioxane dissolves many organic materials including phenol, naphthalene, vegetable oils, fatty acid

Faster Materials Handling

... A "MUST" FOR SWINGING INTO YOUR RECONVERSION STRIDE ...

Weld-Bilt HYDRAULIC HI-TRUCKS WILL SPEED YOUR JOBS

TNOW is the time to call in a Weld-Bilt Materials Handling Engineer to make a detailed survey of your operations, and suggest ways to use standard or specially designed equipment that will handle your materials FASTER — save you time and money. There's no obligation for this service — write for complete information.



WELD-BILT Hydraulic Lift Truck. Handles heavier loads easier. Strong — mobile — durable. Exclusive. Horizontally — Mounted hydraulic unit. 2500 to 10,000 lbs. capacity.

WEST BEND EQUIPMENT CORP.

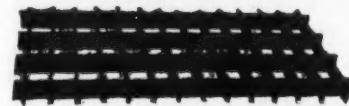
226 WATER STREET, WEST BEND, WISCONSIN

MATERIALS HANDLING ENGINEERS

Hydraulic Lift Trucks, Two and Four-Wheel Trucks, Tiering Machines, Skid Platforms, Barrel Trucks and Racks, Portable Elevators and Special Equipment.

When inquiring specify CP A3088 — see information request blank, pgs. 2-3

HENDRICK MITCO



OPEN
STEEL
FLOORING

Pressure Formed

For More Efficient Performance!

No rivets or bolts to fail in Hendrick Mitco Open Steel Flooring! Free from residual stresses, too, as this long-service flooring does not depend on locking devices or welding! Hundreds of tons of hydraulic pressure are used to force square-edged steel cross bars into bearing bars so metal completely fills the dovetails, forming integral unit. Maximum light and ventilation afforded by 90% open area! Non clogging and non-slipping, Mitco Open Steel Flooring provides level surface and correctly-spaced openings for safe walking — and easy riding of trucks. Full information upon request.

HENDRICK MANUFACTURING COMPANY

Carbondale, Penna.



30 Church Street, New York City

Sales Offices in Principal Cities

Also manufacturers of Perforated Metal Screens, Perforated Metal Grilles, Light and Heavy Steel Plate Construction

When inquiring specify CP A3089 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

MATERIALS

amines, urea, and, in presence of 10-12% water, the protein, zein. The chemical, physical and toxicological properties of this product have not been fully investigated and its handling or use may be hazardous — care should be exercised. Properties: Appearance — colorless plastic crystals; molecular weight — 90.05; odor — pleasant characteristic odor resembling chloroform; pure trioxane has no formaldehyde odor. Melting point — 61°-62° C. Boiling point — 114.5° C. at 760 mm. Heat of sublimation — 0.15 Kg cals. per gm. Flash point — 113° F. Specific gravity, molten — 1.17 65° C./20° C. Bulk density — 0.63g. per cc. (25° C.) Trioxane is available at present in limited quantities for research and development purposes.

E. I. du PONT de NEMOURS & CO. (Inc.), (Electrochemicals Department, Field Research Section), Dept. CP, Wilmington, Delaware.

When inquiring specify CP A3090 — see information request blank, pgs. 2-3

Non-Flammable Thermoset Plastic, Optical; Electrical Properties

Offered in liquid monomer state; polymer's refractive index higher than most optical glass

Uses — This non-flammable thermoset plastic with high optical and electrical properties, good resistance to abrasion and high resistance to oils and greases, is to be known as "Kriston." After molding, it can be worked on standard machining and polishing equipment. Some immediate applications which have been suggested for "Kriston" polymer are in the optical industry where its excellent refractive index and good physical properties make it a promising material for optical lenses, prisms, or transparent sheets; the electrical industry where its electrical and physical characteristics suggest its use as insulators, control knobs, handles, panels and other molded insulating parts, especially in the high frequency range; chemical and processing industries where imperviousness to corrosive materials and solvents should make it valuable in fabricating parts and equipment; as a low pressure laminant for paper, fabrics, and wood for mechanical services.

Features — Shrinkage of "Kriston" monomer is substantially lower than that of any other materials of its type. Polymers resistance to abrasion is much higher than thermoplastics, making possible its use in places where plastics have heretofore been unsuitable.

Description — The product, one of a series of new thermosetting resins, is formed by polymerizing liquid monomer in the presence of a suitable catalyst. Low temperatures and no pressures are required. "Kriston" monomer is a somewhat viscous, water-clear, anhydrous liquid having a specific gravity of 1.25 which can be cast in simple molds. It sets to a hard, resistant plastic. No water or other volatile products are released during the polymerization, making easy the preparation of dense, non-porous articles. "Kriston" polymer has a refractive index of about 1.57. This is higher than most optical glass. The material can be made into a water-clear plastic or made into a wide range of colors which can be transparent, translucent or opaque. In its cast state "Kriston" is odorless, tasteless, non-toxic and dimensionally stable. It is planned to offer "Kriston" only in the liquid monomer state and the company does not plan to do fabrication but anticipates working closely with manufacturers in developing products made from this raw material.

B. F. GOODRICH CHEMICAL CO., Dept. CP, Rose Bldg., Cleveland, Ohio.

When inquiring specify CP A3091 — see information request blank, pgs. 2-3



• Basic manufacturing material for the huge North Plant of the Wyandotte Chemicals Corporation at Wyandotte, Michigan, is salt brine. Into this storage tank it pours 24 hours a day every day in the year—from six wells some 1400 feet underground. Daily brine production of this one tank is in excess of 412,000 gallons.

WYANDOTTE CHEMICALS CORPORATION

ONE OF THE WORLD'S GREAT PRODUCERS OF CHEMICALS

SODA ASH

CAUSTIC SODA

BICARBONATE OF SODA

CALCIUM CARBONATE

CALCIUM CHLORIDE

CHLORINE

HYDROGEN

SODIUM ZINCATES

AROMATIC INTERMEDIATES

DRY ICE

Other Organic and Inorganic Chemicals

WYANDOTTE CHEMICALS CORPORATION
MICHIGAN ALKALI DIVISION • WYANDOTTE, MICHIGAN



Wyandotte
REG. U. S. PAT. OFF.

When inquiring specify CP A3092 . . . see information request blank, pgs. 2-3



J&C



If your manufacturing process requires the dewatering of any crystalline, granular or fibrous slurries, you will want to know more about the giant Zenith Pulp Press. This continuous press dewateres up to fifteen tons of pulp in one hour. Pressure is transmitted (see cut away view) by means of a slowly revolving spiral-bladed spindle. Because of its built-in heating system and design of its walls, draining is doubly efficient. For complete facts write today to:

JACKSON & CHURCH CO., SAGINAW, MICHIGAN

When inquiring specify CP A3093 — see information request blank, pgs. 2-3

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MATERIALS

Jointing Compound for High Pressure Water Mains

Great adherence to surfaces; resists high and low temperature shocks

Uses — This improved sulfur base jointing compound is especially made for jointing cast iron bell and spigot water mains.

Features — It has greater adherence to metal surfaces; practically no contraction. It resists high and low temperature shocks as well as severe vibration and mechanical abuse. Flows very freely to assure complete filling of joints. Uniform and homogeneous, requiring little stirring. Sets and hardens within a few minutes and therefore backfilling is not delayed.

Application — The "Nu-tite" compound is placed in a steel or cast iron kettle and melted slowly until it becomes flowing. Fluid and at most suitable condition for use at 267° — 320° F. "Nu-tite" joints are poured like any other "hot pour" joints.

Description — "Nu-tite" is shipped in the form of nuggets (about size of coal) in 100 pound bags. It can be stored indefinitely since it is unaffected by dampness or other atmospheric conditions. The nuggets are ready to melt and require no breakage as is the case with large ingots. Bulletin gives complete directions for use and chart for determining quantity required for individual jobs according to the particular dimensions. Copies on request.

NUKEM PRODUCTS CORP., Dept. CP, Buffalo, N. Y.

When inquiring specify CP A3094 — see information request blank, pgs. 2-3

NOW AVAILABLE IN COMMERCIAL QUANTITIES

ACETONITRILE

(Methyl Cyanide)
CH₃C≡N

A clear colorless liquid distilling without decomposition at 80-83° C.

MISCIBLE WITH

Cellulose esters
Collodion
Fatty Acids
Acetone
Benzene

Water
Ethyl Alcohol
Ethyl Acetate
Castor Oil

IMMISCIBLE WITH

Cellulose Ethers
Paraffins
Fatty Acid Glycerides
Fats

For further information write to:

NIACET
CHEMICALS DIVISION

Sales Offices

926 Niagara Building • Niagara Falls, N. Y.

When inquiring specify CP A3095 — see information request blank, pgs. 2-3



What are the clean machining qualities of an adhesive? Very many. An adhesive must not foam, skin-over, crystallize, corrode metal, harden rubber parts, break down under continuous agitation, etc.

In all transfer and stencil applications, the adhesive must be non-stringy, non-creeping, non-spattering . . . to prevent "locking" and interference with subsequent operations of labeling, envelope making, bag sealing, carton filling, etc.

You can safely rely on National . . . with its practical background of adhesive applications . . . to provide the clean machining qualities needed to handle your specific job *efficiently* at its highest level of production. Inquiries are invited—NOW! 270 Madison Avenue, New York 16 and principal cities.

National
ADHESIVES

EVERY TYPE OF ADHESIVE FOR EVERY TYPE OF ADHESION

When inquiring specify CP A3096 — see information request blank, pgs. 2-3

FOR CHAPPED, CRACKED, OR DRY SKIN

M.S.A. FEND-X
INDUSTRIAL SKIN CONDITIONER



Use this modern cream to keep your workers' skin in healthy condition—avoiding sore, chapped hands that hamper production! FEND-X supplies to the skin specially-formulated ingredients to offset effects of industrial and winter exposure—proven *on-the-job*. Easy to use, non-greasy emollient.

WRITE for descriptive literature on FEND Barrier Protection creams and lotions.

MINE SAFETY APPLIANCES COMPANY

Braddock, Thomas and Meade Streets
PITTSBURGH 8, PA.

When inquiring specify CP A3097 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

MATERIALS

Fire Retardant Coating For Use On Factory, Warehouse Interiors

For use as a surface coating on wood surfaces on interior of buildings where complete coverage can be maintained; Underwriters Laboratories approved



Tongue depressor partly painted demonstrates fire retardant effect. (Do not apply on gloss paint, varnish, enamel or waxed surfaces.)

Uses — For protecting wood and other materials against fire hazard. For treating combustible surfaces in factories, warehouses, garages and wherever such fire retardant coating tends to reduce the fire hazard of wood and other materials. Highly adhesive, this coating will bond to wood, fibre-wallboard, sheathing board and wood fibre material. May be applied over old flat paint without lessening its fire retardant effect.

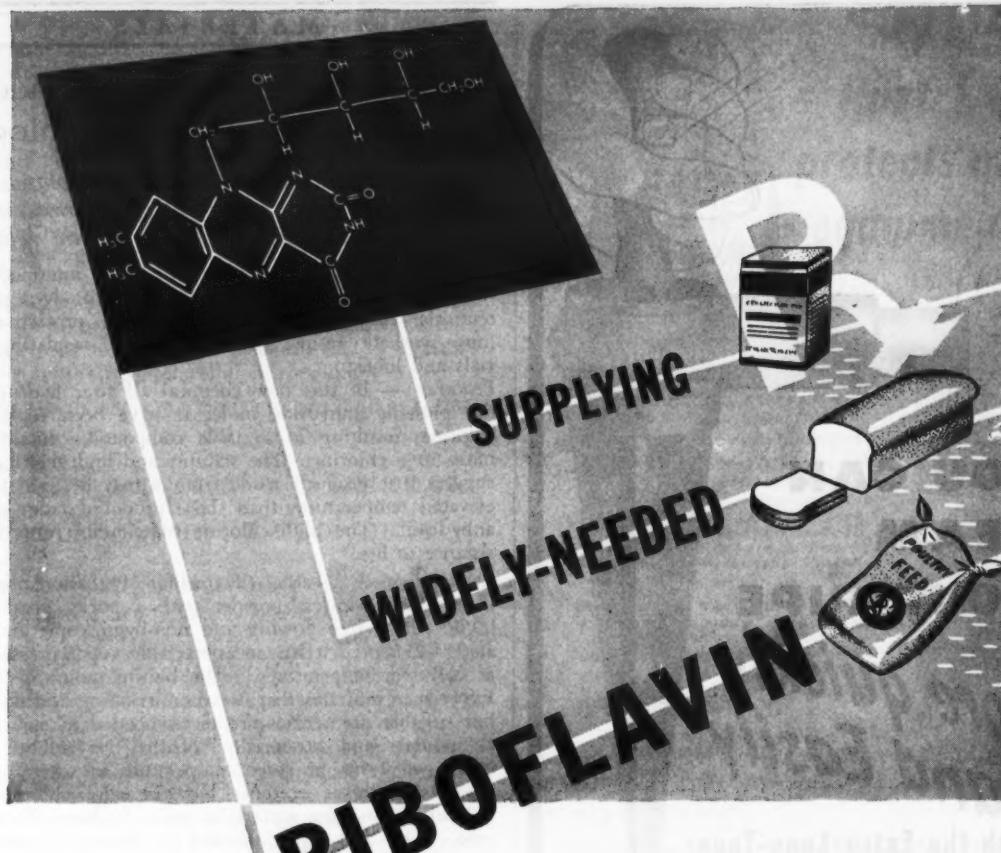
Features — The material may be applied like a paint — brush or power spray gun may be used. The material dries out to a high bone white surface with high light refraction qualities. The texture and abrasive resistance are quite like that of enamel and may be considered as a permanent paint for interior use, not affected by ordinary humidities or temperature changes; no corrosive effect on metal; no toxic fumes are given off when the material is subjected to fire. Shipped as concentrated paste. After dilution with water (not to exceed one part of water to four parts of paste) one concentrated gallon will cover as much as 185 square feet with two coats. While the standard color is bone white, tints may be added or paste may be secured in standard colors.

Description — "Albi Repel S" is a fire retardant coating material which reduces the fire hazard of wood or other combustible materials. It is designed to protect against the hazard of intense sustained fire and is for interior use only. In application of this coating a zinc sulphate wash is recommended. After dust and dirt have been removed from old surface the zinc sulphate wash may be applied by mopping or by brush. This prevents moisture and atmospheric acids from attacking the coating and increases the life of the material. It prevents dusting and chalking. In a recent test by Portland, Oregon Fire Department, two identical wood structures were subjected to fires of burning oil. One, painted with this fire retardant material suffered only charring, while the untreated one burned in less than twenty minutes. Illustration shows physician's tongue depressor; one end of which is painted with fire retardant material. The unpainted end burns freely but flame dies when reaching painted portion. In addition to Albi Fire Repel S, a fire retardant liquid for treatment of uncoated wood and other absorbent materials and a compound for use on fabrics are also offered. Complete data on these, including bulletins containing data from Underwriters' Laboratories reports, on request.

GENERAL DETROIT CORP., Dept. CP, 2270 East Jefferson Ave., Detroit 7, Mich.

When inquiring specify CP A3008 — see information request blank, pgs. 2-8

NOVEMBER-DECEMBER, 1945



• Whether supplied for pharmaceutical uses, as an ingredient of flour enrichment concentrates or as a part of poultry feed mixtures, Pfizer riboflavin reflects the care and control exercised in maintaining output quality at uniformly high levels.

Trained chemists and engineers supervise the commercial production of riboflavin with the same watchfulness, the same specialized knowledge and skills which are applied to every one of the more than a hundred Pfizer products. The precautions they take . . . the processing techniques developed for their use . . . the modern equipment at their disposal — all these are logical extensions of a quality-first policy dating from the company's founding almost a century ago. Chas. Pfizer & Co., Inc., 81 Maiden Lane, New York 7, N. Y.; 444 West Grand Avenue, Chicago 10, Ill.

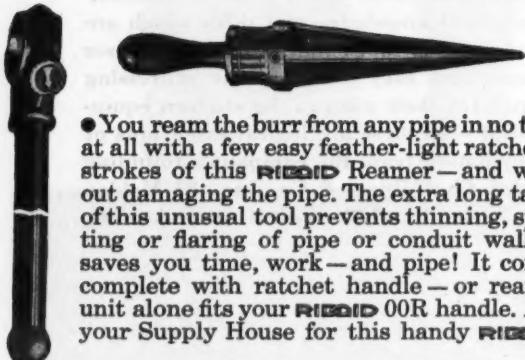
PFIZER

Manufacturing Chemists Since 1849





It won't thin, flare or split pipe



• You ream the burr from any pipe in no time at all with a few easy feather-light ratcheted strokes of this RIDID Reamer—and without damaging the pipe. The extra long taper of this unusual tool prevents thinning, splitting or flaring of pipe or conduit wall. It saves you time, work—and pipe! It comes complete with ratchet handle—or reamer unit alone fits your RIDID 00R handle. Ask your Supply House for this handy RIDID.

RIDID
WORK-SAVER PIPE TOOLS

THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U.S.A.

When inquiring specify CP A3000 — see information request blank, pgs. 2-3

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MATERIALS

Tetrachloro Phthalic Anhydride — Stable Compound 50% Chlorine

May be used as an intermediate or compounding material in manufacture of dyes, pharmaceuticals; in fungicides, esters, resins, synthetic rubbers

Uses — This product is suggested as an intermediate or compounding material in the manufacture of dyes, pharmaceuticals, fungicides, esters, plasticizers, protective coatings, synthetic resins, synthetic rubbers, insulating materials and lubricants.

Features — In this new chemical all four hydrogens of the phthalic anhydride molecule have been replaced by chlorine, resulting in a stable compound, containing almost 50% chlorine. The stability and high melting point suggest that products made from it may be used at more elevated temperatures than those produced from phthalic anhydride. The high chlorine content also improves resistance to fire.

Description — "Niathal (Tetrachloro Phthalic Anhydride) is a white, odorless powder with a purity greater than 99%. It is free flowing and non-hygroscopic and melts at 254-255° C. It has an appreciable vapor pressure only at elevated temperatures. The boiling point is 362° C. Experience indicates that it is non-irritating and non-toxic, but suitable precautions are recommended in making new compounds and products. "Niathal" is soluble to the extent of 2-4% at room temperature in several organic solvents, such as acetone, benzene, and chlorobenzene. Solubilities increase materially with elevation of temperature. The acid esters, formed by dissolving tetrachloro phthalic anhydride or its acid in alcohols, are highly soluble in organic solvents. One hundred parts of water dissolved with difficulty up to 0.33 of "Niathal" at 20° C. and about 1.6 parts at 90° C., forming the corresponding dibasic acid. A pH of about 2.0 characterizes this solution. With caustic soda or caustic potash solutions it readily forms highly soluble neutral, and slightly soluble acid, salts. Several common metals form nearly insoluble salts. At the present time "Niathal" is available only in experimental quantities.

NIAGARA ALKALI CO., Dept. CP, 60 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A3100 — see information request blank, pgs. 2-3

Revised Edition of Technical Reference Book on Cellulose Acetate

A revised edition of the technical reference booklet on Cellulose acetate has just been issued which brings up-to-date the fundamental literature on the three major bases for cellulosic plastics produced by this organization. Revisions of the ethyl cellulose and nitrocellulose booklets were issued several months ago and are still available. Included in the plastics material of the revised cellulose acetate booklet is a new section on the use of cellulose acetate in thermoplastic laminates. The improved dimensional stability and greater water resistance of plastics made from high acetyl acetate is also discussed in the booklet. In addition to the information on plastics, the booklet suggests many other uses of Hercules cellulose acetate in rayon, film and foil, and specialty lacquers. Beginning with a description of the care with which the acetate is manufactured, the booklet describes general properties and specific properties which have made acetate so popular in the plastic and related fields, particularly for injection moldings.

Part two of the written material is a discussion of specific

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(TRADE NAME REGISTERED)



The inherent physical properties of Amersil (American Silica) articles meet practically all conditions where extreme thermal, chemical and electrical conditions are encountered.

Write today for the new Amersil book describing these properties and showing

a variety of Amersil articles now in use in laboratories, chemical, metallurgical and industrial plants.

AMERSIL COMPANY Inc.

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ENGELHARD

HILLSIDE 5, N. J.

When inquiring specify CP A3101 — see information request blank, pgs. 2-3

TEAM-MATES IN QUALITY

PURECO CARBONIC GAS

Noted for its dependability, quality and uniformity. Please order only as necessary, returning all empty cylinders promptly.



"DRY-ICE", the versatile, economical refrigerant used in a host of ways in the processing of Chemicals and Pharmaceuticals.

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General Offices: 60 E. 42nd St., New York 17, N.Y.

NATION-WIDE SERVICE — DISTRIBUTING STATIONS IN PRINCIPAL CITIES

When inquiring specify CP A3102 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

Mr. Purchasing

Agent:

COTTON TEXTILES may be a small or large item on your production line or in maintenance work . . .

but get your quotations first from BURCOTT MILLS — who are large enough in capacity to supply you with the textiles you need for prompt shipment from Chicago stocks — at lowest prices — and small enough to give your urgent as well as regular needs personal attention.

While all textiles have not yet been released for civilian consumption, write or wire for those that are available. OR — Send for Brochure on Industrial Textiles and current price list.

BURCOTT MILLS

622 W. FULTON ST.

CHICAGO 6, ILL.

When inquiring specify CP A3103 — see information request blank, pgs. 2-3



"Blue Label"

RR ALUNDUM

For Carbon Determinations

"Blue Label" RR ALUNDUM by Norton Company is recommended for protecting combustion boats from the slagging effect of iron oxide in carbon determinations.

"Blue Label" RR ALUNDUM is produced from a raw material containing over 99% pure aluminum oxide. Further processing increases purity and maintains the carbon content of this refractory grain below 0.0015%.

NORTON COMPANY

Worcester 6

Massachusetts

N O R T O N

When inquiring specify CP A3104 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

MATERIALS

uses of acetate in lacquers, film and foil, laminates, and plastics. The written material is further amplified by the inclusion of extensive data, in tables and figures. The tables include data on properties of cellulose acetate, solvents useful with cellulose acetate, compatibility of resins with cellulose acetate, starting formulas for specialty lacquers, and properties of cellulose acetate plastics and laminates. The figures show the results of tests on clarity of cellulose acetate plastics, the solubility of low viscosity cellulose acetate, and include a blending chart, viscosity concentration curves, results of water resistance tests on high acetyl acetates, and other technical data of interest in the many applications for cellulose acetate.

HERCULES POWDER CO., Dept. CP, Wilmington, Delaware.

When inquiring specify CP A3105 — see information request blank, pgs. 2-3

Dibutyl Sebacate — Plasticizer For The Vinyl Copolymers

High plasticizing strength evidenced by amount required to produce a given flexibility

Uses — As a plasticizer for the vinyl copolymers, polyvinyl chloride, polyvinyl butyral, nitrocellulose, cellulose acetobutyrate, acrylic resins and synthetic rubbers.

Features — Extremely resistant to yellowing on long exposure to light. It has high plasticizing strength as evidenced by the amount required to produce a given flexibility. It is tasteless and has no residual odor and retains its plasticizing effect at extremely low temperatures.

Description — Purity 98.5% minimum; specific gravity 0.935 20/20°C. Flash point 380°F., Fire Point 420°F. Water solubility less than 1% at 25°C. Weight per gallon 7.8 lbs. It is employed as a plasticizer in polyvinyl butyral resins used as the interlayer in safety glass and in cellulose acetobutyrate molding powders, transparent sheeting and in nitrocellulose lacquers. Technical bulletin on request.

HARDESTY CHEMICAL CO., INC., Dept. CP, 41 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A3106 — see information request blank, pgs. 2-3

Catalog Lists 3000 Organic Chemicals, Gives Structural Formulas; Molecular Weights

3,000 organic chemicals intended primarily for the laboratory research are described in catalog known as List No. 34.

Marked by a number of departures from previous issues, the new edition should prove of great help to chemists in ordering such products. For example, along with most of the chemicals listed are included their structural formulas and molecular weights. It is said that inclusion of this information materially increases the value of the listing by eliminating uncertainty as to the identity and position of groupings. It also clarifies the confusion caused in some instances by the nomenclature of organic chemicals. The format has been increased in size to bring it more nearly into line with the standard chemistry text books, and the plastic binding has been retained which permits easy use when the book is opened flat. At the back of the book are included special listings of chemicals of a particular type such as the amino acids, sugars, etc., and the hydrogen ion indicators with their pH ranges. Seventy-two "spot test" reagents are also listed.

EASTMAN KODAK CO., (Chem. Sales Div.), Dept. CP, Rochester 4, N. Y.

When inquiring specify CP A3107 — see information request blank, pgs. 2-3

**"My high
Rust I.Q.*
protects metal
equipment!"**

*Inhibitive Quality



Steel Block Test
proves Eagle
Super "66" is
rust-inhibitive!

Here is how one steel
block looked after
being imbedded in a regular insulating
cement during the test period.
Note the extent of the rust. Such
corrosion also occurs on iron and
steel equipment whether heated or
cold.

The other steel block looked like this
after being imbedded in Eagle Super
"66" for the same test period. Note
absence of rust. This shows how
effectively the rust-inhibitive qual-
ities of Super "66" can protect your
heated equipment.



As shown by Steel Block Test above, Eagle Super "66" . . . in addition to doing an unsurpassed job of insulating . . . actually inhibits rust!

High efficiency results from "Springy Ball" Structure

Eagle Mineral Wool, principal ingredient of Eagle Super "66", is made up of springy pellets containing countless dead air cells, providing highly efficient insulation. "Springy Ball" structure, created by these resilient pellets, is retained after the insulation dries, thus preserving its extremely low thermal conductivity.



An easy-to-use, all purpose insulation

Eagle Super "66" does not break down or disintegrate. It gives exceptional protection, and is easily applied to almost any shape or size surface. It withstands a full range of temperatures to 1800°F., and if not used at temperatures above 1200°F., can be removed, remixed and reused! Dry coverage is unusually high . . . cost per sq. ft. is less than most insulating cements and blocks.

To guard Eagle Super "66" from outside damage, we recommend Eagle INSULSEAL . . . a tough, weather-proof coating that resists scuff and bumps.

FREE Manual Gives case examples of how industrial insulation effects large fuel savings. Includes Heat Loss Estimate Sheet for your use. Write for copy.
Finish the war faster — keep on buying War Bonds!



EAGLE-PICHER INSULATIONS High and Low Temperature

Made by THE EAGLE-PICHER COMPANY, Cincinnati (1), Ohio

Eagle Super "66" Insulating Cement • Eagle L-T and M-2 Felt • Eagle SuperTemp Block • Eagle Blankets • Eagle Pipe Covering • Eagle Insulseal • Eagle Loose Wool Eagle Insulistic • Eagle Swatchek • Eagle Drycote



When inquiring specify CP A3108 — see information request blank, pgs. 2-3

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MANY
INDUSTRIAL
ROLL
PROBLEMS
are solved
by using

"SHAF-TITE" ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel, plastic, etc. Whatever your roll problem, put it up to



RODNEY
HUNT

SEND FOR CATALOG TODAY!
RODNEY HUNT MACHINE CO.
273 Maple Street, Orange, Mass.

When inquiring specify CP A3109 — see information request blank, pgs. 2-3

Corrosion Proofing

IN SOME OF AMERICA'S LARGEST PLANTS

* "Prufcoat on floors and pump supports in sulfuric acid concentration plant — good after two years."

* "Entire concrete building coated with Prufcoat — no trace of failure due to blistering, peeling or chipping in over five years."

* "Prufcoat on concrete piers and steel beams subjected to muriatic acid fumes — no deterioration in over two years."

* Actual Prufcoat reports. Names of these plants upon request.



Prufcoat Protective Coatings are applied by brush by your own maintenance crew to any surface — concrete, steel and masonry structures, tank cars and trucks, chemical handling equipment, tanks and ventilating systems, etc. The resultant coating gives Positive Protection against acids, alkalies, water and weather. No matter what your corrosion-proofing problem may be, chances are Prufcoat can show you a performance-proved treatment. Write today for folder.



Prufcoat Laboratories Incorporated · 63 Main St., Cambridge 42, Mass.

When inquiring specify CP A3110 — see information request blank, pgs. 2-3

Page 46

MATERIALS

Low Carbon Ferromanganese At Same Cost As Regular Grade

For addition to stainless and other steels

Uses — Particularly useful for adding manganese to stainless steel and other quality steels where high purity is essential.

Features — This special low carbon-ferromanganese is available at the same price as regular grade.

Description — High ratio of manganese to undesirable elements; produced in the maximum 0.10% carbon grade, following is a typical analysis: Manganese 90.00% min. — Phosphorus 0.06% — Carbon 0.06%.

ELECTRO METALLURGICAL SALES CORP., (Unit of Union Carbide & Carbon Corp.) Dept. CP, 30 E. 42nd St., New York, N. Y.

When inquiring specify CP A3111 — see information request blank, pgs. 2-3

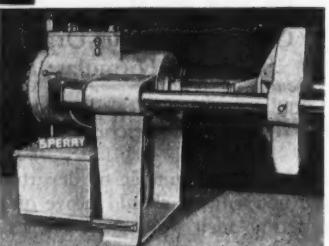
Cellular Rubber in Molded Shapes, Tubes, Sheets, Bonded Fiber Forms, Die Cut Shapes

Cellular rubber products in a wide variety are the subject of a highly informative, illustrated bulletin featuring practical suggestions on utilization of this material, describing the several forms in which it is used in producing items to meet exacting specifications. The first of these "Spongex" is a resilient, spongy, blown form of rubber. It has many automotive and industrial applications. Made to order from crude, reclaim and synthetic rubbers, it can be compounded to obtain wanted properties such as resistance to



Easy... Does it
WITH THE NEW
SPERRY
EHC Closing Device

Woman operator making simple adjustments on the New Sperry EHC Closing Device



Speed your filtration cycle with the New Sperry EHC Closing Device

The New Sperry EHC Closing Device requires only simple adjustments at two points. So easily operated that a girl operator can do the work.

This completely enclosed, electric-hydraulic unit, provides positive, precise, yet simple press actuation, moving the head in both directions.

It fits any make press with minor alterations. On Sperry presses a mere substi-

tution of the crosshead is all that is necessary.

Write today for complete information

D. R. SPERRY & COMPANY, Batavia, Ill.
Filtration engineers for over 50 years

SPERRY FILTER PRESSES

Eastern Sales Representative, Henry E. Jacoby, M.E.
205 E. 42nd St., New York 17, Phone: MURray Hill 4-3581
Western Sales Representative, B. M. Pilhachy
Merchants Exchange Bldg., San Francisco 4, Calif., Phone: Do 0375

When inquiring specify CP A3112 — see information request blank, pgs. 2-3

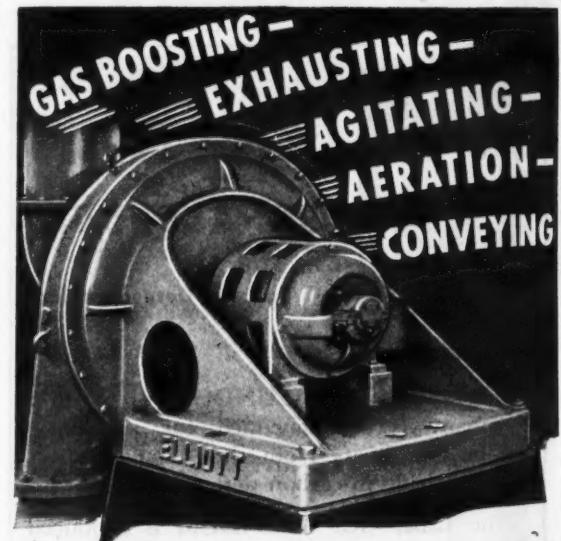


Why worry about the men who are not to be had? In many process plants, the manpower problem for handling bulk materials has been eliminated with Hough Payloaders. These compact, readily-maneuverable units speedily pick up their loads, hoist them and carry them to nearby or distant points and dump them into trucks, bins or pits. The Model "HA" Payloader, pictured, will load, carry 100' and dump at the rate of 25 tons or more per hour. Note how easily this unit goes in and out of box cars where it is a great time saver. Hundreds of Payloaders are in Service with nearly every nationally known Fertilizer and Chemical Company. Ask for Bulletin 149.

THE FRANK G. HOUGH CO.
Libertyville, Illinois
"Since 1920" 

HOUGH Payloader SHOVELS

When inquiring specify CP A3113 — see information request blank, pgs. 2-3



ELLIOTT BLOWERS

are sturdy and quiet, with an enviable reputation for uninterrupted operation on process work. Designed for the job, in single-stage or multi-stage units, for capacities of 2000 cfm and up, and for pressures of 1.5 lb. gage and up. Built of corrosion-resistant materials, when necessary.

Drives are Elliott also—motor, gear, or turbine, as required, thus providing complete unit responsibility.

Consult your nearest Elliott engineer-representative on your next blower application.

P-1069

ELLIOTT COMPANY Centrifugal Blower Dept.
JEANNETTE, PA.
District Offices in Principal Cities

When inquiring specify CP A3114 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

MATERIALS

oils, acids and corrosive vapors. In molded "Spongex" forms, all surfaces including holes, slots and ridges are skin-covered. In special cases, "Spongex" can be molded in combination with metals, plastics, fabrics and wood as well as other forms of rubber. It is also available in cord, tubing, strips, sheets, rolls, pads, as well as in a variety of shapes die cut to requirements from this sheet stock. Another form, "Cell-Tite," differs from "Spongex" in that cells are non-connecting but filled with inert gases which impart insulating properties against air, sound, moisture, heat, cold. In bonded fiber forms it is called "Texlock" and "Texlite" respectively for such applications as cushioning fragile shipments and in cushioning seats, chairs, etc. Copies of Bulletin 845-21 on request.

SPONGE RUBBER PRODUCTS CO., Dept. CP, 216 Derby Place, Shelton, Conn.

When inquiring specify CP A3115 — see information request blank, pgs. 2-3

Powder Preparation for Purification of Gray Iron & Malleable Iron

Pocket size folder describes features and applications of "Foseco" "Iron R12" a preparation in powder form used for the purification of gray iron and malleable iron. It is stated that this product will reduce iron oxide present, bringing the reaction product into the slag which can be easily skimmed; increases fluidity of the iron; produces closer grain; improves machining properties; does not attack linings. The quantity to be used varies from 2 to 8 pounds per ton of iron. In applying Foseco "Iron R 12" the required amount is thrown into the bottom of the ladle or onto the spout and the iron permitted to flow into it. Then skim and pour as usual. Foundries that use Soda Ash for desulphurizing can use this product to aid more efficient handling of slag. The folder cites a number of case histories emphasizing such results as better machining, longer lathe tool life and increase in temperature in the ladle. Copies on request.

FOUNDRY SERVICES, INC., Dept. CP, 280 Madison Ave., N. Y.

When inquiring specify CP A3116 — see information request blank, pgs. 2-3

Porous Carbon & Graphite for Filtration and Gas Dispersion in Plates, Tubes, Rods

A recently issued catalog section — Number M — 8900 — contains practical reference data on "Carbocell" porous carbon and "Graphicell" porous graphite for filtration and gas dispersion. These possess uniform high porosity and small pore size and are available in the form of plates, tubes, and rods; easily machined and fabricated into advantageous shapes; resistant to acids and alkalies; not subject to fracture and spalling from thermal shock. Copies on request.

NATIONAL CARBON CO., Dept. CP, 30 E. 42nd St., New York, N. Y.

When inquiring specify CP A3117 — see information request blank, pgs. 2-3

Data on Diglycol Chloroformate

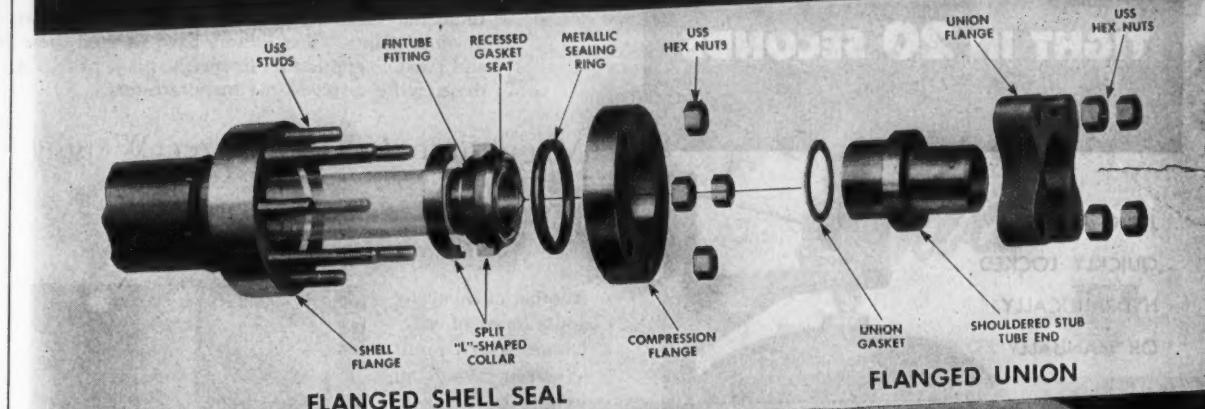
Technical bulletin gives essential data on Diglycol Chloroformate (Diethylene Glycol Bis (chloroformate) which is useful in organic processes. Ester or carbamate derivatives, useful as non-volatile plasticizers or modifying agents, may be prepared by chemically reacting the Diglycol Chloroformate with alcohols and amines. The physical properties of this acid chloride are conveniently tabulated in this bulletin (T — 100) which is available on request.

PITTSBURGH PLATE GLASS CO., (Columbia Chemicals Div.) Dept. CP, Grant Bldg., Pittsburgh, Pa.

When inquiring specify CP A8118 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

THIS EFFICIENT HEAD END ASSEMBLY



featured exclusively in BROWN FINTUBE Sectional Heat Exchangers

DEVELOPMENT of this flanged head end and its adaption to sectional hairpin heat exchangers — another achievement of Brown Fintube engineers — enables users to avoid packed joints, glands, ground joint seals, screw unions, and all the operating and maintenance troubles resulting from ground joint and screw union construction.

With this construction, the seating surfaces of the shell flange and fintube fitting are in full view. They can be wiped clean of all grit and dirt before closing the seal, — not possible with inside ground joint construction. The soft metal ring overcomes any slight unevenness of the seating surfaces, and permits tight, leak-proof closures to be made time after time.

Enthusiastically endorsed by operating and maintenance departments of oil refineries and chemical processing plants, this ring joint seal is but one of the many exclusive features only Brown Fintube Sectional Heat Exchangers can give you. Brown's exclusive "one-piece" fintubes whose high heat transfer efficiency is maintained undiminished during the entire life of the tube, — our exclusive non-removable rear end construction, and replaceable stud bolting throughout are some of the others.

Send today for the fully descriptive catalog, and let our engineers help you in adapting Brown Fintube Sectional Heat Exchangers to your exact and individual requirements.

THE BROWN FINTUBE COMPANY

119 HURON STREET • ELYRIA, OHIO

Send for
Bulletin
No. 452



MANUFACTURERS OF BROWN RESISTANCE WELDED INTEGRALLY BONDED ONE-PIECE FINTUBES, AND FINTUBE HEAT TRANSFER PRODUCTS

When inquiring specify CP A3119 . . . see information request blank, pgs. 2-3

LOCKS PRESSURE- TIGHT IN 20 SECONDS

J & C AUTOCLAVE
QUICKLY LOCKED
HYDRAULICALLY
OR MANUALLY



The cover of the J & C Autoclave locks pressure-tight in 20 seconds! In hydraulic models, it is necessary to merely trip a lever. In manually-operated models the cover is locked by a few quick turns of a smooth-working wheel. In addition to this extra speed and ease of operation, you get many other engineered advantages that have made J & C Autoclaves unusually successful in impregnating and densifying porous or leaky castings. Through the J & C Autoclave process you can reclaim valuable magnesium, aluminum, and bronze castings to show greater foundry profits. J & C engineers will supervise complete layout and installation or cooperate with your engineering department. Write for full particulars.

JACKSON & CHURCH COMPANY • SAGINAW, MICHIGAN



When inquiring specify CP A3120 — see information request blank, pgs. 2-3

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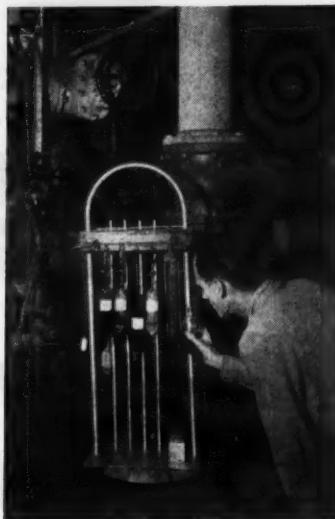
IDEAS

Industrial ingenuity constantly hatches new ideas, many of which can be applied to similar problems in other plants. The Editors have selected these ideas and developments because of their interest and possible application in specific plant problems. If you would like more information on any of these, write direct to the manufacturers.

Magnesium Cuts Analyzer Weight

Increases convenience for technician in taking gas samples throughout plant

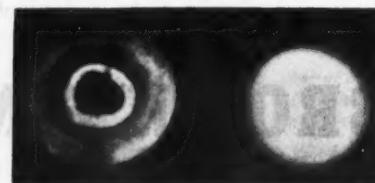
Another of the many applications of magnesium which result in great savings in weight is found in this interesting incorporation in gas analyzer design. The use of magnesium in the gas analyzer shown here makes it eleven pounds lighter than the steel apparatus which it replaced and which weighed twenty pounds. This convenient, light weight unit is constructed of extruded tubing and plate and finished with aluminum paint. It is used in a plant of the Dow Chemical Company for determining the amount of carbon dioxide, carbon monoxide and oxygen in the system. As it must be carried frequently during the day by the technician who takes gas samples at a number of different locations on each of three floors of the building the unusual light weight of the instrument is a distinct advantage. Besides being easier to handle, the magnesium is very sturdy and attractive in appearance.



Gas analyzer weight cut 11 lbs. by use of magnesium

Reflector Eliminates Dark Spot

Diamond facet design achieves all white light and is available for flashlights, lanterns



Flashlight dark-spot eliminated

A light reflector that departs from conventional design embodies a new principle of light reflection and eliminates the dark spot produced by present types. It is being made for use in flashlights, searchlights, lanterns, spotlights and floodlights. Named the Diamond Facet Reflector, the design makes use of the light reflecting qualities of diamond structure and in place

of a smooth wall finish which causes light beams to clash with one another, the reflector surface has its surface broken into multiple diamond shapes to reflect the light. The unretouched photo shows how the usual dark spot is eliminated. The circle on the left is made by flashlight with a smooth wall reflector; the right which is white all over is made by flashlight with new reflector. This type of flashlight is now being introduced by the same company that perfected the reflector. It is known as the "Flood-beam" flashlight. (General Detroit Corp., 2270 E. Jefferson Ave., Detroit 7, Mich. or affiliate General Pacific Corp., 1800 So. Hooper St., Los Angeles.)

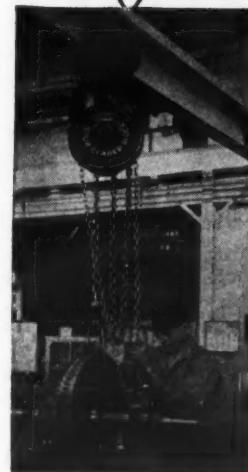
Countersunk Plastic Pipe Seals

Now offered in addition to squarehead patterns; fit commercial square bars of standard sizes

Plastic pipe seals and thread protectors in countersunk pattern offer the advantages of strength and lightness. The maker of these seals has introduced them as an addition to those of the squarehead pattern that were first developed. The plastic takes accurate and durable threading, is non-corrosive, dielectric and efficiently ex-



**Safer...Faster...
More Efficient
Production with**
**TRADE YALE^{TRADE} SPUR GEARED
CHAIN HOISTS**



Workers can lift heavier loads with less effort—in less time—with Yale Spur Geared Chain Hoists.

Precision engineered, these ball-bearing hoists embody such features as drop-forged steel safety hooks, self-actuating load brakes, hand-welded steel load chains and detachable shackles.

Available in capacities from $\frac{1}{4}$ to 40 tons and in models to suit every industrial need. All hoists are tested to 50% over-load. Write for catalog.

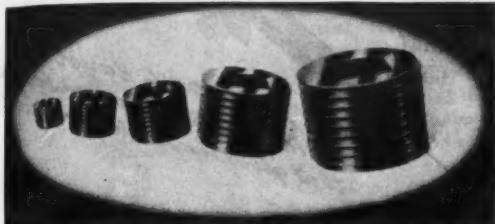
**THE YALE & TOWNE
MANUFACTURING CO.
4530 Tacony Street
Philadelphia 24, Pa.**

When inquiring specify CP A3121 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

IDEAS

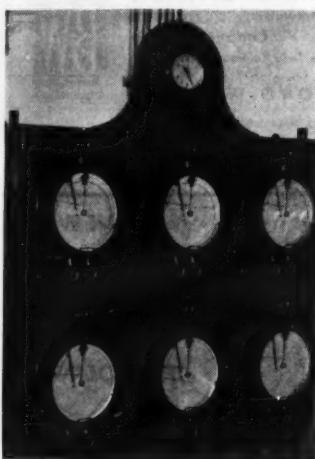
cludes moisture, oil, dirt, grease, etc. The square sockets of this new countersunk pattern are of dimensions to fit commercial square bars of standard sizes. Dimensions are the same as the maximum size of cold rolled square steel bars given in the ASTM specifications. Sizes available are: $\frac{1}{8}$ ", $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", and 1". (American Molded Products Co., 1644 N. Honore St., Chicago, Ill.)



Plastic seals in sizes $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ and 1 inch dimensions are the same as the maximum size of cold rolled square steel bars given in the ASTM specifications. Sizes available are: $\frac{1}{8}$ ", $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", and 1". (American Molded Products Co., 1644 N. Honore St., Chicago, Ill.)

Beauty Bath for Hosiery

Automatic time and temperature control achieves exact matching of shades in rayon hosiery

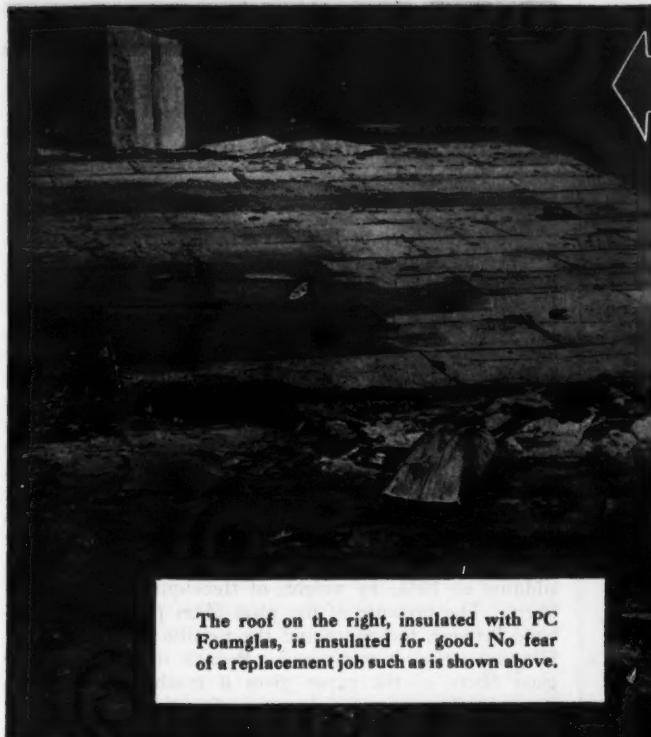


Controls — raise and hold dyes at predetermined temperatures

Instrumentation plays a vital part in an important development in hosiery production that embodies a "beauty bath" to give a dull finish on rayon yarns. Such finish has long been desired and Mission Hosiery Mills, Los Angeles, developed the beauty bath referred to here to achieve such a finish and the wearing qualities of natural yarns. Through the use of automatic time and temperature control the equipment illustrated

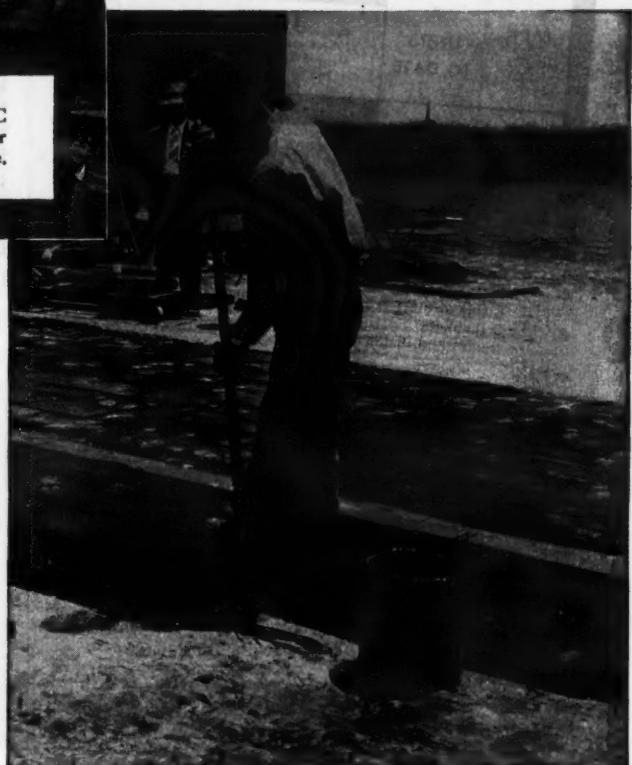
places hosiery dyeing on a new scientific basis. Hosiery can be produced in exactly matched shades of colors without failure. At the start of rayon hosiery production obtaining uniform and perfectly matched dyeing that would produce a lustreless sheen rather than a shiny glow were among the problems confronting hosiery mills. The beauty bath was developed to meet these problems and improve quality. In the beauty bath, the Foxboro company (Foxboro, Mass.) incorporated its elapsed time controller. The elapsed time controller raises the temperature of the dye in the machine to the required degree and holds the temperature for a predetermined time.

The "deferred action" feature that may be incorporated in this elapsed time controller is the answer to proper control in certain applications which require that the elapsed time period of control be measured from the instant that the steam has brought the batch up to the control point. On applications of this type the elapsed time controller is equipped with an automatic release mechanism which defers the starting of the elapsed time controller until temperature has been brought up to the control point.



The roof on the right, insulated with PC Foamglas, is insulated for good. No fear of a replacement job such as is shown above.

This won't happen here



YOU DON'T have to figure on repairs and replacement when you insulate your roof with PC Foamglas. For this strong, rigid material resists attack by elements that cause other materials to lose insulating efficiency. Made of millions of air-filled glass cells, PC Foamglas helps to maintain temperature and humidity levels, to prevent condensation, permanently.

When you need roof insulation, you need a material that is moistureproof, fireproof, vaporproof, verminproof and impervious to most acids. It is conveniently packaged, easily handled, quickly installed.

Only with PC Foamglas do you get all these advantages. Even a break in the roofing felt that exposes the material to rain or melting snow will not cause PC Foamglas to rot, check, warp, swell or shrink. In addition it forms such a firm, even base for roofing felt that such breaks rarely if ever occur.

FIRST COST IS LAST COST

When you are figuring on insulation for roofs, floors, walls, tanks or plant equipment, learn why the most efficient, the most economical material is PC Foamglas. Check your choice of the illustrated booklets on PC Foamglas Insulation on the convenient coupon and mail it today to Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pa.

Also makers of PC Glass Blocks.

PC FOAMGLAS *Waterproof* *Fireproof* **INSULATION**



Pittsburgh Corning Corporation
Room 681, 632 Duquesne Way
Pittsburgh 22, Pa.
Dear Sirs:
Please send along my free copies of the booklets I have checked. It is understood that I incur no obligation.

Roofs..... Walls..... Floors.....

Name.....

Address.....

City..... State.....

When inquiring specify CP A3122 . . . see information request blank, pgs. 2-3

"REPEATS!"

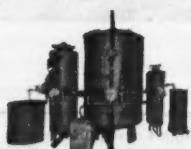
Here's how one De-ionizing Unit leads to another, in leading plants

MFR. A	3 UNITS TO DATE	Feb. 26, 1942: one 1,000-gph unit... Mar. 25, 1944: one 1,500-gph unit... July 11, 1945: one 3,000-gph unit
MFR. B	5 UNITS TO DATE	Aug. 7, 1943: one 500-gph unit... Feb. 9, 1944: one 360-gph unit... June 23, 1944: one 360-gph unit... Dec. 6, 1944: one 180-gph unit... Jan. 4, 1945: one 50-gph unit
MFR. C	7 UNITS TO DATE	April, 1944: one 180-gph unit... June, 1944: one 200-gph unit... Nov., 1944: one 180-gph unit... Sept., 1945: four 300-gph units
MFR. D	14 UNITS TO DATE	Nov., 1944: two 1,500-gph units... Feb., 1945: two 1,500-gph units... Feb., 1945: one 750-gph unit... June, 1945: one 1,500-gph unit... July, 1945: one 12-gph unit... Aug., 1945: three 3,000-gph units... Sept., 1945: four 1,500-gph units

A Nationally known pharmaceutical concern
B Manufacturer of electronic tubes, radio tubes, etc.
C One of the largest electrical manufacturers
D Distillers
Names and installation details on request

De-ionized Water replaces distilled water in more and more plants these days... and when it does, it's not long before additional units are ordered! Above are unit re-orders, from our records... indicating the quality of ILLCO-WAY equipment and the efficiency of its performance. ILLCO-WAY De-ionizing Units are daily producing pure water comparable to that obtained by distillation. No fuel, no cooling water required, no periodic dismantling for cleaning... Write for literature today!

ILLINOIS WATER TREATMENT COMPANY
849-11 Cedar Street, Rockford, Illinois
7310-GII Empire State Bldg., New York City



Water Treatment Engineering

TESTED IN THE LABORATORY
ILLCO-WAY
PROVEN IN THE FIELD

When inquiring specify CP A3123 — see information request blank, pgs. 2-3

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IDEAS

Milled Glass Fibers Improve Papers, Plastics and Paints

Fibers in length range of 1/32 to 1 1/2 ins.; diameter in all lengths 0.00025 of an inch

Research now being conducted points to numerous uses of Fiberglass milled fibers as a reinforcing agent for special papers, plastics and abrasive compounds. The milled fibers have also been employed to improve the deadening characteristics of sound deadening paints. These fibers are formed by hammermilling Fiberglas continuous yarns into maximum lengths ranging from one thirty-second of an inch to one and one-half inches. Diameter of the fibers in all lengths is 25 one hundred thousandths of an inch (0.00025). Appearance varies with the maximum fiber length; shorter lengths are tightly nodulated; longer sizes form a loose mass. The tear strength of explosive paper used for wrapping dynamite is materially increased by the addition of 10%, by weight, of three-quarter-inch milled fibers. The presence of the glass fibers provides a better bond between the paper and the paraffin used to coat it. Hinging action is minimized. Because dispersion of the glass fibers of the paper gives it much more uniform strength, the paper disintegrates after the explosion, instead of leaving small pieces to smolder and perhaps cause fire. Ten percent, by weight, of the milled fibers dispersed in the filtering paper gives it more uniform capillary

It's
THE
"LEAD"
IN THE
PENCIL
THAT
COUNTS

and it's the 20% layer of
STAINLESS STEEL in INGACLAD
that gives the service you want!

For many jobs it is just as impractical to use solid stainless as it would be to insist on an "all-lead" pencil. The "backing" element in both cases gives you a more practical... more economical product for most uses.

If you are planning on modernizing your plant equipment or products by using stainless steel, investigate IngAclad Stainless-Clad.

As producers of both Ingersoll Solid Stainless and IngAclad, our engineers will advise you without prejudice and without charge.

INGERSOLL STEEL & DISC DIVISION

Borg-Warner Corporation

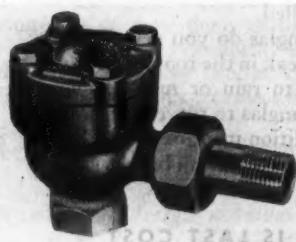
310 South Michigan Avenue • Chicago 4, Illinois
Plants: Chicago, Ill., New Castle, Ind., Kalamazoo, Mich.



PRODUCTS OF BORG-WARNER

When inquiring specify CP A3125 — see information request blank, pgs. 2-3

STERLING THERMOSTATIC TRAPS



Sterling Thermostatic Traps are built for pressures from 0 to 150 pounds steam pressure.

Years of service on thousands of installations show efficient, trouble-free service.

No. 9-10 Thermostatic Trap

No. 7-50	1/2" x 1/2"	0 to 15 pounds pressure
No. 7-14	3/4" x 3/4"	0 to 15 pounds pressure
No. 8-10	1 1/2" x 1 1/2"	0 to 100 pounds pressure
No. 8-11	3/4" x 3/4"	0 to 100 pounds pressure
No. 8-12	1" x 1"	0 to 100 pounds pressure
No. 9-10	1 1/2" x 1 1/2"	25 to 150 pounds pressure

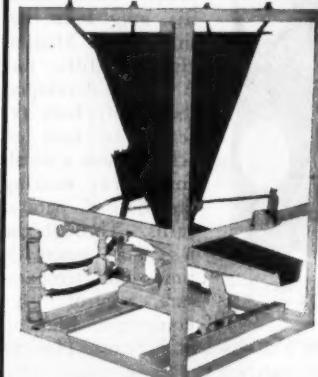
STERLING, INC.

3738 North Holton Street Milwaukee 12, Wis.

Heating Specialties, Process Temperature Controls,
Heating Pumps, Automatic Radiator Controls

When inquiring specify CP A3124 — see information request blank, pgs. 2-3

A NEW
"WRINKLE"
IN
MATERIAL
HANDLING



SYNTRON

"Hydra-Pulse"

VIBRATORS

For "FREE-FLOWING" bins, hoppers and chutes.

VIBRATING FEEDERS

For "CONTROLLED FEEDING" of bulk materials.

VIBRATING FEEDER MACHINES

Complete units, as illustrated above.

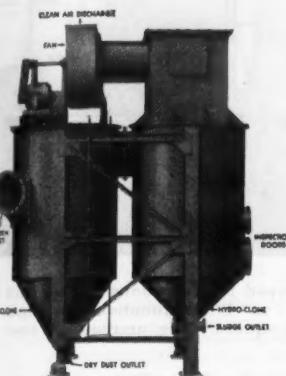
WATER — AIR — OR OIL OPERATED to suit the application. EXPLOSION PROOF for use in hazardous atmospheric locations or handling explosive materials.

SYNTRON CO., 110 Lexington, Homer City, Pa.

When inquiring specify CP A3126 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

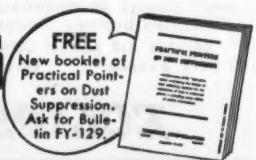
Reclaim Valuable Dusts with the Wet-Dry Type Hydro-Clone



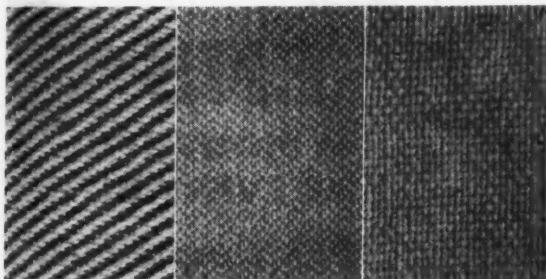
This is a twin unit that recovers coarser materials dry, and suppresses the fines with water, reducing them to sludge. It handles heavier loads than other filters or separating devices, including high temperature dusts that would burn out cloth screen collectors.

The Whiting Hydro-Clone has no moving parts... no spray nozzles to clog... no cloth bags or screens to replace. Available in capacities from 2,000 to 30,000 cfm. Write for Bulletin FY-117 for full information.

WHITING
CORPORATION
15667 Lathrop Ave.
Harvey, Illinois



When inquiring specify CP A3127 — see information request blank, pgs. 2-3



COTTON

Have you tried our cotton filter media . . . our conversion service?

Cotton as applied to filter media isn't just cotton. There are grades in this raw material just as there are grades in certain other raw materials. We use the most suitable cotton available for our cotton filter media.

We also maintain at both of our factories — Salt Lake City and Irvington-on-Hudson, New York — an efficient and economical conversion service to make up complete filter covers. Tell us the make and size of filter. We have all the necessary data. We can probably save you money and time.

Send for our latest catalog.

FILTER MEDIA CORPORATION

Irvington-on-Hudson, N. Y.

Salt Lake City

11-FM-2

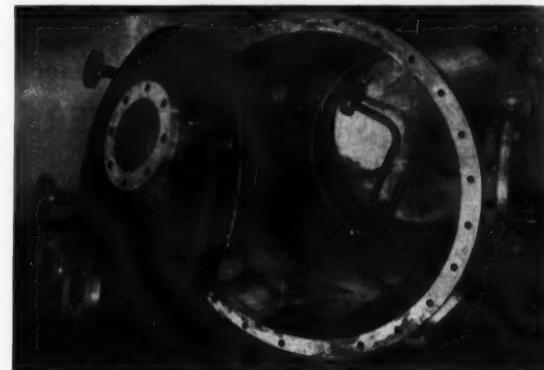
When inquiring specify CP A3128 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

IDEAS

larity and speeds the filtering process. The fibers are highly adsorbent and act as veins which conduct moisture rapidly throughout the paper. The same percentage in laminating papers speeds impregnation by the resin and reduces curing time.

The fibers are being successfully incorporated in high pressure resins (melamine) to form molded plastic switch boxes. Tests show increased impact strength, and an arc resistance of 183-186 seconds of flash in contrast to from 2 to 5 seconds of flash when other fillers are used, and that when burned (ASTM test) there is a weight loss of only 3 percent as compared to 30 percent weight loss with some other fillers. Strength and performance of abrasive cutting wheels have been improved and top operating speed increased. Another interesting application is with phonograph records, imparting as much as 400 per cent improvement in impact strength, elimination of deterioration sometimes due to microscopic blisters in sound track attributed to swelling of organic filler material caused by moisture adsorption. No increase in noise level is caused by the presence of the glass fibers. Fiberglas milled fibers ranging from one sixteenth to one thirty-second of an inch have been incorporated in sound deadening paints with maximum improvement in sound deadening qualities. Such paints, sprayed on metal surfaces "de-ping" the metal by reducing the vibration. One of their chief fields of use is in the automotive industry for application to interior metal surfaces of cars and industrial vehicles. All of these uses indicate an almost limitless application of these milled fibers in paper, plastics, abrasives and paints for improved performance and economy. (Owens-Corning-Fiberglas Corp., Toledo, Ohio.)



STAINLESS STEEL TANK

Stainless Steel Tank made from Type 347, polished inside with polished coils.

25 years of fabrication with all grades of alloys is available for special work.

Write for Bulletin CP 30

ALLOY MANUFACTURING CO.

30th Street

Pittsburgh, Pa.

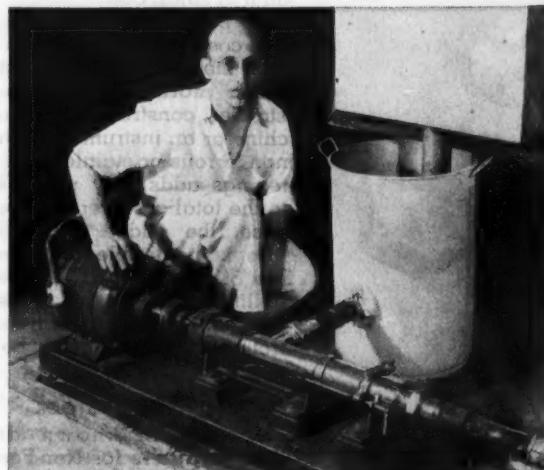
When inquiring specify CP A3129 — see information request blank, pgs. 2-3

Mr. Fetter finally took his Moyno Pump apart

... TO FIND OUT WHY IT WORKED SO WELL!

Pumps usually are torn down for other reasons. But when you—like Mr. Fetter—find one that keeps on going, day-in and day-out, on the *same job* where other pumps gave trouble, you'll be just as curious, and as pleased, as he was.

The R & M Moyno doesn't even look like any other pump—and it *isn't* like any other pump. It's a clever, patented design without pistons or valves, that handles virtually *everything* from free-flowing liquids to non-pourable pastes.



H. J. Fetter, Superintendent, Bear-Stewart Co., Chicago, with his food-type Moyno Pump.

SEND FOR THIS NEW FREE BOOK

Find out how the simple Moyno principle, with its self-priming single pumping element, delivers *positive* pressure without pulsation; *resists* abrasion and acid attack; *passes* particles; *stands up* where other pumps fail. Types and sizes for every service. Thousands in use.

Keep posted on pumping progress. Ask us, today, for new Book No. 20, just off press.



ROBBINS & MYERS • INC.

MOYNO PUMP DIVISION • SPRINGFIELD, OHIO

HOISTS & CRANES • MACHINE DRIVES • MOTORS • FANS • FOUNDED 1878

When inquiring specify CP A3130 — see information request blank, pgs. 2-3

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DEFY CORROSION at small cost

BUILD YOUR PRODUCT WITH EVERLASTING FASTENINGS

Your product must stand up in use. In many cases it will meet the destructive forces of rust and corrosion.

Forestall trouble! Use Harper Everlasting Fastenings. They're made of either brass, naval bronze, silicon bronze, copper, Monel or stainless steel. They defy rust and corrosion . . . and do it at small cost.

To be sure . . . a bronze bolt costs more than a common steel one . . . but not much more. In most instances, constructing a machine or an instrument with non-ferrous or stainless fastenings adds only pennies to the total cost. Percentage wise, the added expenditure is negligible. But the life of the product . . . the ability to "take it" . . . the probability of freedom from trouble are increased beyond measure.

4360 ITEMS IN STOCK

Harper is known as "Headquarters for Non-Ferrous and Stainless Fastenings" . . . carries large and complete stocks of 4360 different items and is continually adding others. Write for 1945 Catalog.

THE H. M. HARPER CO.

2544 Fletcher Street
Chicago 18, Illinois

BRANCH OFFICES: New York City
Philadelphia • Los Angeles
Milwaukee • Cincinnati • Houston
Representatives in Principal Cities

HARPER
EVERLASTING FASTENINGS

BRASS • BRONZES • COPPER
MONEL • STAINLESS

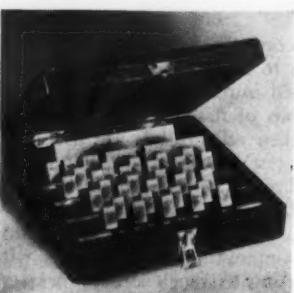
When inquiring specify CP A3131 — see information request blank, pgs. 2-3

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IDEAS

Tungsten-Carbide Gauge Blocks

Now offered in complete set for general industrial use; meet Bureau of Standards requirements



Carbide-tungsten blocks in "AA", "A" and "B" tolerances

tungsten carbide blocks are produced consistently in all grades to a finish .2 to .4 micro inch r.m.s. which excels the "A" quality (.8 micro inch) required by the Bureau of Standards. They are corrosion-proof against moisture or finger marks. They are offered in "AA" (.000002), "A" (.000004) or "B" (.000008) guaranteed tolerances. These tungsten-carbide gauge blocks are processed by the "ultra-finish" machine lapping method; this imparts a surface finish and flatness for superior block wringing and adhesion qualities. The blocks wring to steel with equal facility. Sizes of tungsten-

A complete set of tungsten carbide gauge blocks has recently been introduced for general industrial use. The makers state that this is the first time such a complete set manufactured from tungsten carbide and meeting Bureau of Standards requirements has been available. Wear resistance is superior to materials used to date. These "ultra-finish"

Because they are approved for hazardous mixing and because they require so little attention, Pneumix Air-Motored Agitators frequently run unattended over entire week ends.

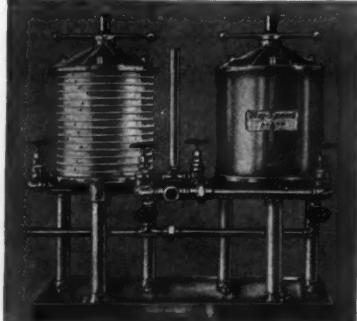
Pneumix no-spark construction means there is no explosion hazard; there are no electrical connections, and overall construction is such that there are few parts that can wear out or break in service.

There are sizes and types of Pneumix units to meet most mixing or agitating needs. Write today for the illustrated bulletin "Pneumix in Action."

ECLIPSE AIR BRUSH COMPANY
393 Park Avenue Newark 7, N. J.

ECLIPSE

When inquiring specify CP A3133 — see information request blank, pgs. 2-3



ALSOP "Hy-Speed" FILTERS

Alsop Hy-Speed

One Filter For Many Solutions

One Alsop "Sealed-Disc" Filter can be kept busy filtering many types of liquids, in cloudy plating solutions, chemical, drugs, and water. Here is why: "Sealed-Disc" Filters can be quickly taken apart and cleaned. The inexpensive filter discs are easily replaced. In addition, when mounted on portable stands, "Sealed Disc" Filters can be moved from point to point with complete ease.

In writing for our recommendations or for further information, tell us about your problem.

ALSOP ENGINEERING CORP.
18 Alsop Square, MILLDALE, CONN.

11-AL-4

When inquiring specify CP A3132 — see information request blank, pgs. 2-3

Pneumix

**AIR
MOTORED**

Agitators

Operate With Little or No Attention



Because they are approved for hazardous mixing and because they require so little attention, Pneumix Air-Motored Agitators frequently run unattended over entire week ends.

Pneumix no-spark construction means there is no explosion hazard; there are no electrical connections, and overall construction is such that there are few parts that can wear out or break in service.

There are sizes and types of Pneumix units to meet most mixing or agitating needs. Write today for the illustrated bulletin "Pneumix in Action."

ECLIPSE AIR BRUSH COMPANY
393 Park Avenue Newark 7, N. J.

ECLIPSE



THE OWEN BUCKET COMPANY, 7050 Bassett Ave., Cleveland, O.
Branches: New York • Philadelphia • Chicago • Berkeley, Calif.

When inquiring specify CP A3134 — see information request blank, pgs. 2-3

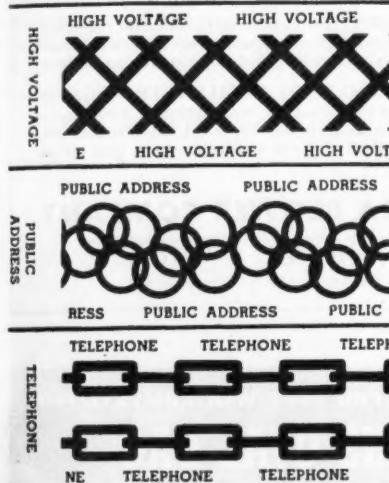
CHEMICAL PREVIEW

IDEAS

carbide blocks in 35 piece set: Range .1001 to .1009 — steps .0001, pieces 9; range 101 to .109 — steps .001, pieces 9; range .110 — .190, steps .010, pieces 9; range .100 - .500, steps 5; range 1.000, 2.000, 3.000, pieces 3. Tests indicate that carbide blocks are 100 times more resistant to abrasion than steel and 98 times more than chrome plated blocks. (Fonda Gauge Co., 53 Daly St., Stamford, Conn.)

Coded Adhesive Marking Strips For Cables, Conduits and Pipes

Strips mounted on cards have distinctive code design in color; easily stripped off and put on pipes, cables and adhere tenaciously

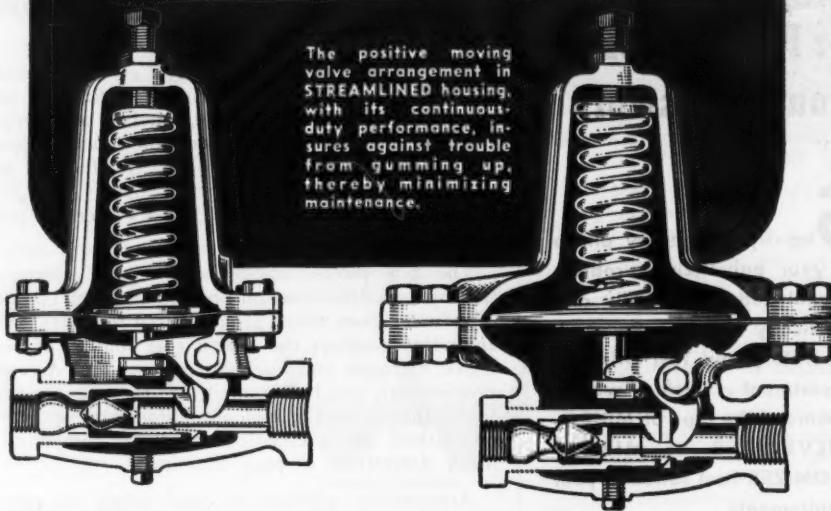


Code System — strips easily attached to electric, liquid, gas lines

and are all ready to use. They are easily removed and stick quickly and securely without moistening. The adhesive used on these tapes is exceptionally tenacious. They must be peeled rather slowly from the card and handled much like the familiar surgical adhesive tape. The standard strips are approximately nine inches long and an inch and a half wide. Applied just where they are needed these "E — Z" Code Markers make complicated piping easy to follow, check, etc., as identification is unmistakable even in dark corners, small spaces and where conditions would ordinarily make identification difficult. In addition to the easily identified and distinctive code design, the exact contents of the line is also printed on each strip. Dangerous errors are prevented and many man hours are saved. Also, once installed the system can be easily expanded to take care of any plant enlargements or addition of lines. A few of the many standard markers are illustrated here to emphasize the types of distinctive codes used. Bright color, plus characteristic appearance for each code is used. In the standardized system red is used for electric lines, blue for liquids, green for gases. These meet practically all requirements but where special problems exist, special markers can be made. To name just a few of the many lines for which markers are available they include: lighting, power, hot water, steam — low and high pressure, sprinkler, drain line, fuel oil, compressed air, gas — industrial high pressure, refrigerant supply, etc. (Western Lithograph Co. (EZC), 600 East Second St., Los Angeles, Cal.)

CASH STANDARD Streamlined TYPE 1000 PRESSURE REDUCING VALVES

The positive moving valve arrangement in STREAMLINED housing, with its continuous-duty performance, insures against trouble from gumming up, thereby minimizing maintenance.



THIS STRAIGHT LINE FLOW an Important Aid to CONTINUOUS PROCESSING



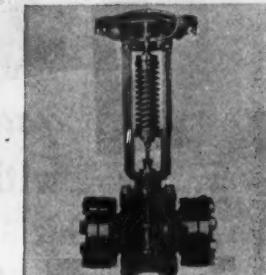
Write today for Bulletin 1000—it describes and pictures how, from inlet to outlet the fluid flows through this valve in a straight line—a streamline. Steam, air, and water capacity charts are shown. Eight pages of valuable valve facts.

CASH STANDARD
CONTROLS...
VALVES

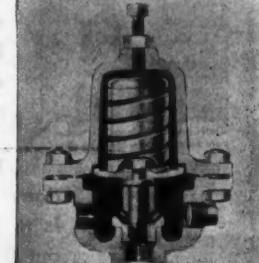
A. W. CASH COMPANY
DECATUR, ILLINOIS

When inquiring specify CP A3135 . . . see information request blank, pgs. 2-3

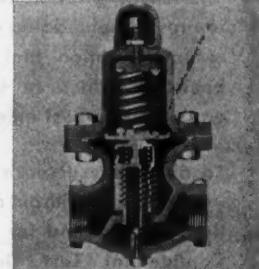
OTHER VALVES
from the
CASH STANDARD
LINE



Cash Standard Type 33 Relief Valve; in various metals to handle nearly all fluids. Has roller guides on valve spindle; also roller bearing to take care of spring torsion. Sizes $\frac{1}{2}$ " to 3" screwed ends; 1" to 12" flanged ends. Bulletin 971.



Cash Standard Type Q Relief Valve has side inlet, bottom outlet. Popular for pump bypass use. Sizes $\frac{1}{2}$ " to 2" screwed ends. Relief pressures up to 350 lbs., temperatures up to 500°F. Bulletin 943.



Cash Standard Type 4190 Valve for relief (bypass) use; holds constant valve inlet pressure regardless of changes in load or outlet pressure. Multiport—large capacity. Iron or bronze bodies; iron or bronze trim. Sizes $\frac{1}{2}$ " to 2" screwed ends; 2" to 6" flanged ends. Bulletin 952.



Selecting

Microscopic examination of determined particles size below 325 mesh.

Sub-Sieve Sieve, or Micro-sieve, method of determining average particle size that are 325 mesh.

your PULVERIZER
without guesswork



Microscopic examination of determined particles size below 325 mesh.



Sub-Sieve Sieve, or Micro-sieve, method of determining average particle size that are 325 mesh.

Scott Volumeter for determining apparent densities.



Step-by-step every phase of your pulverizing problem is analyzed scientifically and practically in our Research Laboratory and Test Grinding Department . . . before we recommend the type of MIKRO-PULVERIZER or MIKRO-ATOMIZER best suited to your requirements.

The exact operating conditions under which your material is to be ground are reproduced in detail . . . the experience and data gained from over 20 years in the making of over 26,000 tests on all kinds of materials, is applied to its fullest extent.

The resulting report can be your unfailing guide to improved pulverizing operations in your plant . . . a recommendation that provides the only practical basis on which to select the proper pulverizing equipment to best meet your needs.

To obtain these services applied to your problem without cost or obligation, simply send for your copy of Confidential Test Grinding Data Sheet.



PULVERIZING MACHINERY COMPANY
60 CHATHAM ROAD • SUMMIT, N.J.
NOW . . . 2 TYPES TO MEET YOUR PULVERIZING NEEDS

MIKRO-PULVERIZER-ATOMIZER
Reg. U.S. Pat. Off.

When inquiring specify CP A3138 — see information request blank, pgs. 2-3

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IDEAS

Direct Amination Process for Production of Organic Nitrogen Compounds

Process accomplishes organic nitrogen fixation by catalytic reaction of ammonia with components of refinery gases now used for fuel

A new method for the production of organic nitrogen compounds by direct amination of olefins has recently been developed. For example, ethylene and propylene, available in refinery gas or derivable from propane, are reacted with ammonia to produce nitriles and amines. United States patents numbered 2,381,470, 2,381,471, 2,381,472, 2,381,473 and 2,381,709 were issued last August 7th.

The new process accomplishes organic nitrogen fixation by a catalytic reaction of ammonia with components of refinery gases which are now used for fuel; the direct amination employs the lowest cost sources of both reactive nitrogen and carbon compounds. Acetonitrile, propionitrile and butyronitrile are the primary products from ethylene and propylene. Pilot plant operation has established the production of these compounds and many derivatives as pure chemicals.

Acetonitrile, acrylonitrile and ethyl, isopropyl and normal butyl amines are examples of known industrial chemicals which can be manufactured economically by the new process. Acrylonitrile is produced now for

NIAGARA Aero Cooling Does It Better! And Saves Cooling Water Cost

Close Temperature Control in Cooling Fluids

NIAGARA Aero Heat Exchanger cools liquids or gases to 10° of atmospheric wet bulb temperature and holds to tolerances of 2°F.

Compressed Air After Cooling

Furnishes drier compressed air—eliminates half the moisture allowed by conventional after-cooling methods.

Holding Quenching Baths to Temperature

Heat treaters increase production, improve age, decrease rejections by using NIAGARA Aero Heat Exchanger to control quenching bath temperatures.

Condensing Refrigerant Gases

NIAGARA Duo-Pass Aero Condenser increases refrigerating plant capacity, saves power. Duo-Pass prevents scaling and clogging of condensers.

NIAGARA AERO HEAT EXCHANGER is used in liquid cooling in industrial and chemical processes, water jacket cooling, hydraulic fluid, transformer oil, lubricating and cutting oil cooling, vapor and steam condensing.

NIAGARA BLOWER COMPANY

Over 30 Years of Service in Industrial Air Engineering
Dept. CP-115, 6 E. 45th St. NEW YORK 17, N.Y.
Field Engineering Offices in Principal Cities

When inquiring specify CP A3138 — see information request blank, pgs. 2-3

PLAN NOW FOR POST WAR COMPETITION!

PARSONS OVAL BAG

Dust Arrestors

- SPEEDS UP PRODUCTION
- CUTS MAINTENANCE COSTS
- INCREASES EMPLOYEE EFFICIENCY

Dust war business will be a "competition business". Far sighted executives will streamline their plant for greater production. Factory dirt and dust slow up production — deteriorate machinery — cause absenteeism. Parsons Oval Bag Dust Arrestors will solve the problem . . . and in most cases actually pay for themselves in increased production and the reclamation of valuable dust. Our engineers will check your dust problem without obligation.



ENGINEERING CORP.

3345 E. 79th St. CLEVELAND 6, OHIO

WRITE FOR BULLETIN . . . "MASTERY OF THE AIR"

When inquiring specify CP A3138 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



When inquiring specify CP A3137 — see information request blank, pgs. 2-3

IDEAS

polymerization with butadiene to yield oil resistant rubbers, the demand for which will increase significantly. Many new polymers and industrial syntheses are expected as soon as acrylonitrile can be produced more economically. Amines are required for rubber chemicals and other important syntheses, and a greater development is probable when this important class of organic bases are more extensively available.

Propionitrile, butyronitrile, normal propyl amines and isobutylamines potentially are new industrial chemicals. A market survey is now being conducted for this refiner by Harshaw Chemical Company as distributing agents for information and samples. Numerous chemicals which have not been available previously for industrial use and many new derivatives hold great promise for future developments of pharmaceuticals, insecticides, fungicides, bactericides, solvents, intermediates for dyes, rubber, photography and plasticizers, and synthesis of new rubbers, resins and plastics. (The Sinclair Refining Co. as per announcement by E. W. Isom, Vice-president directing Research & Development Department.)

Super-Sensitive Balancing Ways

For balancing fans, armatures, grinding wheels, pulleys; sensitive to .007-.009 oz. inches



Balancing large sheave

Sensitivity to .007 is the outstanding feature of recently perfected static balancing ways. The supersensitivity is made possible by the use of special bearings. No levelling or set-up is necessary. Simply set the ways on floor or bench and they are ready to use. The work is carried on free-turning, hardened disc, ground on outside diameters. Discs are ground on outside diameters, mounted on ground spindles and balanced with extreme care. Standards supporting the revolving discs are movable on shafts to take different lengths of armatures within capacity of machine. Maximum strength obtained through use of solid end castings. Four sizes: 10", 20", 42", 60" swing; 400, 1000, 1000, 5000 lbs. capacity respectively. 20", 42" sizes use special sensitive bearings; accuracy to .009. (Ideal Commutator Co., Sycamore, Ill.).

dened disc, ground on outside diameters. Discs are ground on outside diameters, mounted on ground spindles and balanced with extreme care. Standards supporting the revolving discs are movable on shafts to take different lengths of armatures within capacity of machine. Maximum strength obtained through use of solid end castings. Four sizes: 10", 20", 42", 60" swing; 400, 1000, 1000, 5000 lbs. capacity respectively. 20", 42" sizes use special sensitive bearings; accuracy to .009. (Ideal Commutator Co., Sycamore, Ill.).

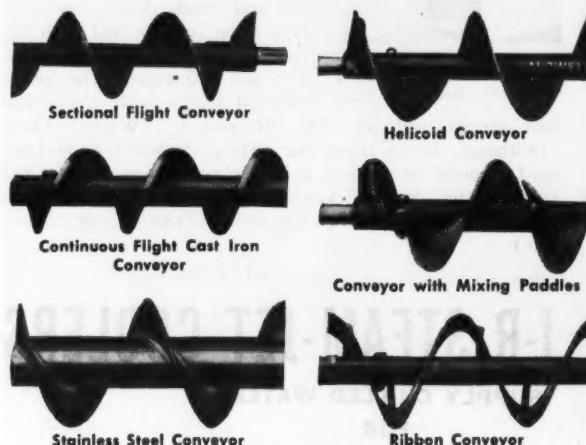
Inventors Offer Novel Sausage Machine; Coffee Tablets

Casings stuffed with materials of contrasting colors; coffee flaked, compressed to hard tablets

A machine has recently been patented for stuffing sausage casings or the like in which different colored materials placed in the machine will appear in elongated layers and in contrasting cross sections. Another unique development also recently patented is a method for making coffee tablets. Beans are roasted and ground in the conventional manner; grains are then passed between pressure rolls which roll them into thin flakes, a pre-determined amount falling loosely into a mold. Flakes are compressed into dense hard, tablets and will not disintegrate easily. Tablets may be packed in cartons.

BE SURE YOUR Screw Conveyor MEETS YOUR SPECIFIC NEEDS

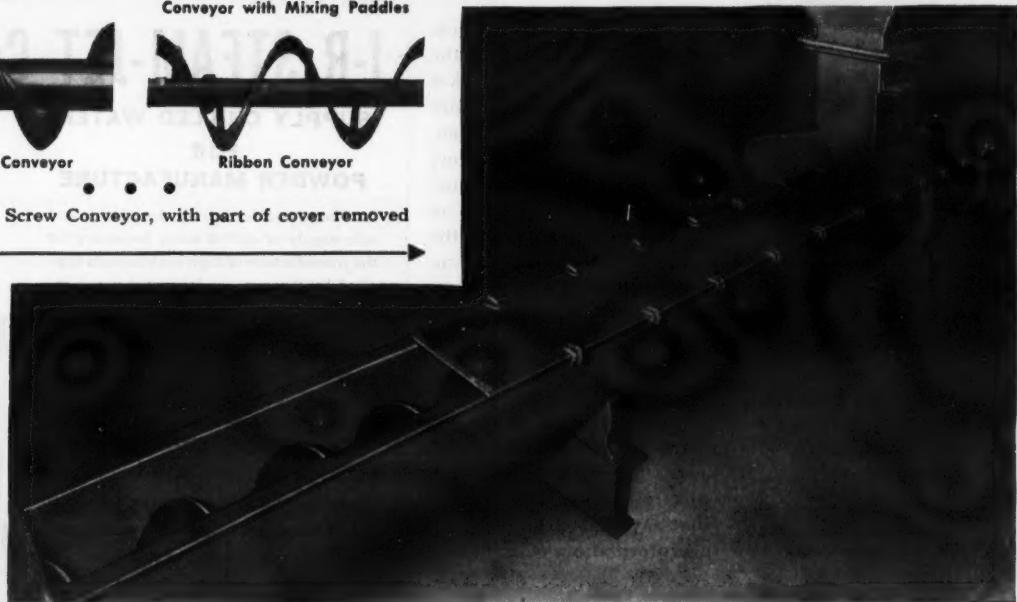
• Screw Conveyors have a wide variety of applications. Also there are many types of screw conveyors. Selection of the proper type is of utmost importance to you, to give you the full advantage of their simplicity, compactness, efficiency, convenience, durability, and clean, dust-tight, trouble-free operation. Submit your problem to "screw conveyor headquarters" for an unbiased recommendation.



Typical Link-Belt Screw Conveyor, with part of cover removed to show flighting.

LINK-BELT COMPANY

Chicago 8
Indianapolis 6
Philadelphia 40
Atlanta
Dallas 1
Minneapolis 5
San Francisco 24
Los Angeles 33
Seattle 4
Toronto 8
Offices, Factory
Branch Stores and
Distributors in
Principal Cities.



LINK-BELT SCREW CONVEYORS

COLLARS • COUPLINGS • HANGERS • TROUGHS • BOX ENDS • FLANGES • THRUSTS • DRIVES

When inquiring specify CP A3140 . . . see information request blank, pgs. 2-3

A FASTER SET-UP FOR A QUICK START



Unlock Rapid-Locks



Adjust to desired height



Lock both Rapid-Locks



Ready for operation

Offices in Principal Cities



Manufacturers of
STEEL FORGED CASTERS - TRUCKS & CONVEYORS - POWER BOOSTERS

The Rapids-Standard Co., Inc.

Sales Div.—350 Peoples Nat'l Bldg., Grand Rapids 2, Mich.

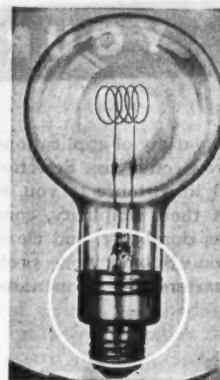
When inquiring specify CP A3141 — see information request blank, pgs. 2-3

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IDEAS

Infra-Red Lamp has Mechanical Joint for Permanent Seal

Placed between base and bulb, eliminates need for cements and other binders



Lamp with mechanical joint

A lamp manufacturer is now offering carbon filament lamps supplied with a mechanical joint between the base and the bulb to provide a permanent seal under all circumstances. This method of mechanically locking the base to the bulb is employed with the purpose of eliminating the need for cements or other binders and assure maximum lamp life even under the terrific heat of infra-red tunnel installations where cements tend to dry out and break down. A clear type lamp is furnished with the mechanical base in 128, 250, 375 and 500 watts. The inside silvered lamps with mechanical

base are available in 128, 250 and 375 Watts. These "Drietherm" lamps are of the carbon filament type and are used in order to produce a higher percentage of infra-red rays in the desired Angstrom drying range. (North American Electric Lamp Co., 1014 Tyler St., St. Louis, Mo.)

I-R STEAM-JET COOLERS

SUPPLY CHILLED WATER FOR POWDER MANUFACTURE

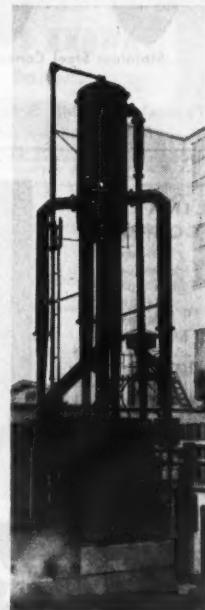
In a large powder factory the reliable and safe supply of chilled water necessary for the manufacture of high explosives is supplied by three steam-jet water-vapor refrigeration units.

The first unit was installed in 1942. Two subsequent units have raised the total plant capacity to 2300 tons of refrigeration.

This is only one of many cooling operations where steam-jet coolers are the logical choice. Their outstanding advantages are:

1. Refrigerant is water—cheap, safe, dependable
2. No moving parts—practically no maintenance
3. High efficiency—maintained at all loads
4. Outdoor installation—no building extensions

If you have a cooling problem and have available steam at almost any pressure, do not fail to investigate the possibilities of steam-jet coolers. An Ingersoll-Rand engineer will be glad to work with you.



Ingersoll-Rand
11 BROADWAY, NEW YORK 4, N. Y. 4-794

When inquiring specify CP A3142 — see information request blank, pgs. 2-3

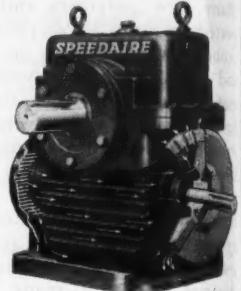
From a Works Manager:

"On the Record— We're Buying Speedaire"

WE have installed 200 Cleveland Worm Gear Speed Reducers since 1924—have had them for an average of 18 to 20 years apiece.

"Our card-records show they have operated 24 hours a day whenever needed, delivering dependable power without requiring a dime's worth of maintenance or parts replacement.

"Those 200 Standard Cleveland Drives have written just about the best recommendation we could ask for your new Speedaire Fan-Cooled Unit. We're specifying Speedaires from now on". Interesting Catalog 300 is complete with engineering tables and fully illustrated. May we send it?



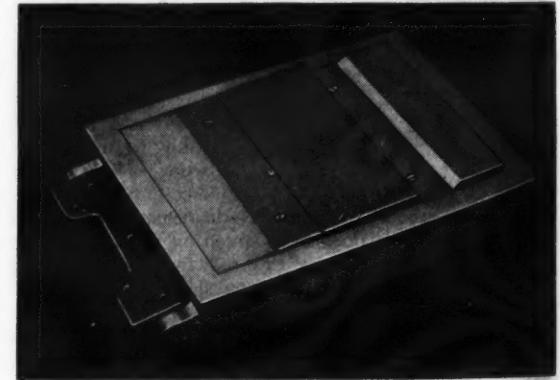
The Cleveland Worm & Gear Company,
3257 East 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication

IN CANADA: Peacock Brothers Limited

Cleveland SPEEDAIRE
FAN COOLED Worm Gear Reduction Units

When inquiring specify CP A3143 — see information request blank, pgs. 2-3



NIAGARA PERMAFLUX spout type magnets are built of Alnico, the strongest magnetic alloy known. Their exclusive "double gap" construction with recessed surface insures effective removal of magnetic impurities from a wide variety of products. Because they require no electrical current and have no moving parts to wear out they furnish dependable and economical protection.

Write today for descriptive literature.

RICHMOND MFG. CO.
LOCKPORT, N. Y.

When inquiring specify CP A3144 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

IDEAS

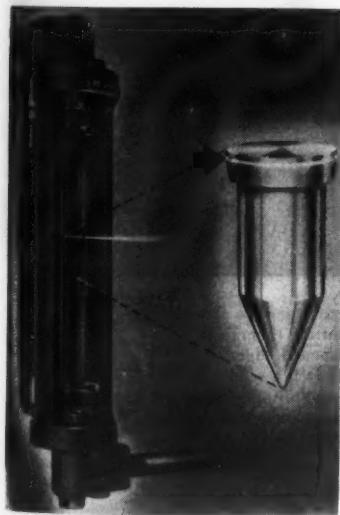
Application of Radioactive Atom

Tracer methods permit following action of drugs; may reveal how fats, sugars are burned in body

The studies in nuclear physics have revealed many types of radiation, some of which can be produced by new methods which allow accurate control. These new tools are keys with which to open the secrets of our physical and biological worlds. These tools are dangerous to work with and man has to protect himself while using them. The applications of these radiations to living tissues, organisms and biological systems is in its infancy. We can make new attacks on disease. For example, science now knows some 200 chemical compounds which cause cancer. By replacing the normal atoms in these compounds with radioactive atoms of the same elements, these compounds can be followed in the animal body by tracer method, and the methods by which they produce cancer can possibly be discovered. The action of drugs can also be followed by this method. Common elements made radioactive by new methods can be incorporated into hormones, vitamins, and foods. (From University of Chicago Bulletin quoting remarks of Dr. Reuben G. Gustavson, biochemist and vice-president of the university commenting on the new Institute of Radiobiology which is working closely with the Institute of Nuclear Studies.)

"Line-o-light" Rotor Aids Readings of Opaque Liquids

Has special disc in head; rate of flow sharply delineated in resultant band of light on tube reference scale

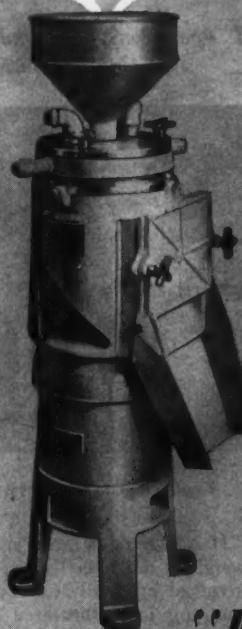


View shows disc in rotor head

sharply in the resultant band of light on the tube reference scale and operators can make easy, accurate readings. This "line-o-light" rotor can be used for practically any application in any type tapered glass tube rotameter. Two types of discs can be furnished; Lucite — or Pyrex for extremely hot or corrosive fluids. (Schutte & Koerting Co., Philadelphia, Pa.).

NOVEMBER-DECEMBER, 1945

BEGINNING OF THE END of high costs



**HOMOGENIZING
EMULSIFYING
DISPERSING
GRINDING**

*Processing in a "PREMIER" Colloid Mill
Increases Production Economy and Efficiency
Improves Product Quality...Free Tests Made*

The first step towards lowering processing costs has often been the use of a Premier Colloid Mill. Whether the materials to be improved are liquids, pastes or solids — performance establishes the economy of a Premier in emulsifying, dispersing and disintegrating.

A Premier Mill is a starting point for product improvement. Its intense shearing action affords thoroughness and uniformity in ingredient mixing, continuous homogenizing and fine grinding.

Typical fields in which Premiers have proved their practical value are adhesive sealing compounds; asphalt emulsions; ceramic colors; coating and waterproofing emulsions; cosmetics; foods and beverages; oil emulsions; inks; leather finishes; latex synthetic and natural; lacquer emulsions; lubricating oils, greases; pigment dispersions; organic chemical dispersions; paints, lacquers, varnishes; paper coatings, fillers, waterproofing; pharmaceuticals; plastics,

resins; polishes, waxes; rubber compounds; textile finishes. (Special laboratory models are available for research work.)

You can get a "Premier Preview", a free actual-performance test in our laboratories. Just ship your materials to us for a first-hand answer to "What can colloid mill processing do for me?" Premier Mill Corporation, Factory and Laboratory, Geneva, N. Y., General Sales Offices, 110 East 42nd St., New York 17, N. Y.

Descriptive Literature on Request

THE PREMIER MILL

Better products more profitably processed

When inquiring specify CP A3145 . . . see information request blank, pgs. 2-3

You Get HIGH temperatures at low pressures with DOWTHERM VAPORIZERS

McKee Eclipse

McKee Eclipse Dowtherm Vaporizer for heating jacketed Autoclave. Gas-fired or oil-fired models from 33,000 to 1,000,000 BTU per hr.

**Gas Safety Shut Off Valves
Centrifugal Pressure Blowers
Air-Gas Proportional Mixers**

It's for Gas—buy Eclipse

McKee Gas Burners for high-pressure steam boilers—gas or oil

When inquiring specify CP A3146 — see information request blank, pgs. 2-3



IDEAS

Tilting Device and Fork Truck Move and Empty Pickling Vats

Speed operations, eliminating slow-up of curing line; protects workers



Cradle tilts to empty vat

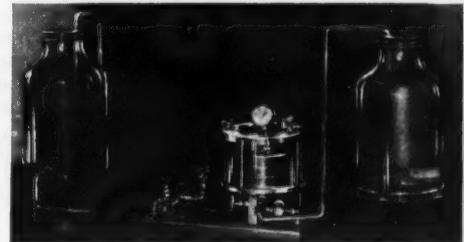
vals. Hand methods were slow and costly and as filled vats weigh as much as 1600 pounds a hazard for workers was involved especially as floors are generally wet. The vat dumping unit illustrated here was engineered to be used in connection with fork type trucks, thus extending

A vat dumping device now in use in the packing industry offers advantages that suggest its application to many other handling problems encountered in numerous other industrial and processing plants. Brine in large open-top wooden vats in which hams are cured must be changed at intervals. Hand methods were slow and costly and as filled vats weigh as much as 1600 pounds a hazard for workers was involved especially as floors are generally wet. The vat dumping unit illustrated here was engineered to be used in connection with fork type trucks, thus extending

SPARKLER "Horizontal Plate" FILTERS

Scientifically designed filters that have set new standards of excellence all over America in clarifying, purifying, renovating, deodorizing, decolorizing, germ-proofing, polishing chemicals, oils, solutions — in fact, anything from the most volatile chemicals to the heaviest waxes.

The streamlined design of the "Horizontal Plate" reduces friction, increases flow rates and lengthens filtering cycles. Adapted for use as a paper, powder or asbestos disc filter — also uses diatomaceous earth most efficiently. Portable, easily maneuvered models and permanent installations. Many sizes, capacities 50 to 10,000 gallons per hour.



Our engineers are at your service.

SPARKLER MFG. CO.
243 Lake Street
MUNDELINE ILLINOIS

When inquiring specify CP A3148 — see information request blank, pgs. 2-3

Simplicity Gyrating Screens



Simplicity Gyrating Screens are available in 63 different sizes or models.

"Write for further information"

View shows a battery of five Simplicity 3' x 6' Single Deck Screens, part of sixteen units operating in a Western starch plant. These screens are used for germ separation, for clean-up and for the various washing operations. Feed is at the rate of 90 gallons per minute per each machine equipped with 150 mesh cloth.

Using Simplicity Gyrating Screens in place of reels enabled this company to handle at 52% greater grind and at the same time reduce the amount of starch in the wash tailings by 20%.

SIMPLICITY ENGINEERING COMPANY
DURAND, MICHIGAN

For Canada Waterous Limited, Brantford, Ontario

When inquiring specify CP A3147 . . . see information request blank, pgs. 2-3

LONGER LIFE for cutting tools



Here's a way to get extra service from cutting tools. Before putting them in the crib, cover freshly sharpened edges with a strip of MYSTIK TAPE. It takes only an instant — guards against dulling — saves costly regrinding to replace edges nicked or burried in storage bins.

MYSTIK goes on fast, holds tight, comes off easily, leaves no residue. Try it in your plant now — write for free sample.

FREE — A generous trial roll of MYSTIK Self-Stik CLOTH TAPE and literature explaining its many uses in solving production problems. Write — Mystik Adhesive Products, 2629 North Kildare Avenue, Chicago 39, Illinois.

MYSTIK Self-Stik
ADHESIVE PRODUCTS

When inquiring specify CP A3149 — see information request blank, pg. 2-3

CHEMICAL PREVIEW

IDEAS

and making more effective packing plant mechanization. The truck transports the vat and places it in a steel cradle. The cradle is centered in a steel framework to which it is pivoted at its forward end. The cradle with its load is tilted by means of gears and an electric motor. Brine and hams are discharged into another vat placed on a pallet or timbers, so that it may readily be lifted and transported by means of the fork truck. (Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 14, Ohio.)

Moisture Test For Dried Fish

New method is faster; adequately accurate

In the usual method of testing dried fish for moisture, the fish are dried in a vacuum oven at 70 degrees C. A new method recently developed in Capetown, S. A., is faster and gives results to within 0.5 per cent of those secured by the usual method. The fish are extracted with boiling alcohol for fifteen minutes, followed by determination of the critical solution temperature, with a paraffin-white oil mixture. (As reported by U.S. Industrial Chemical News)

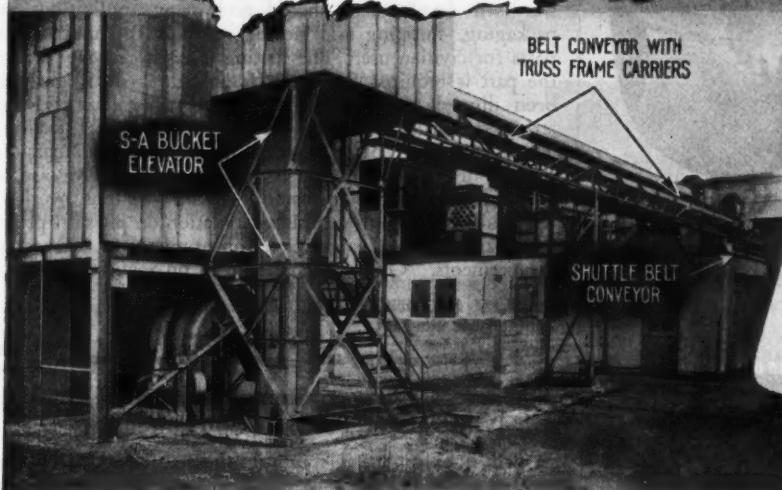
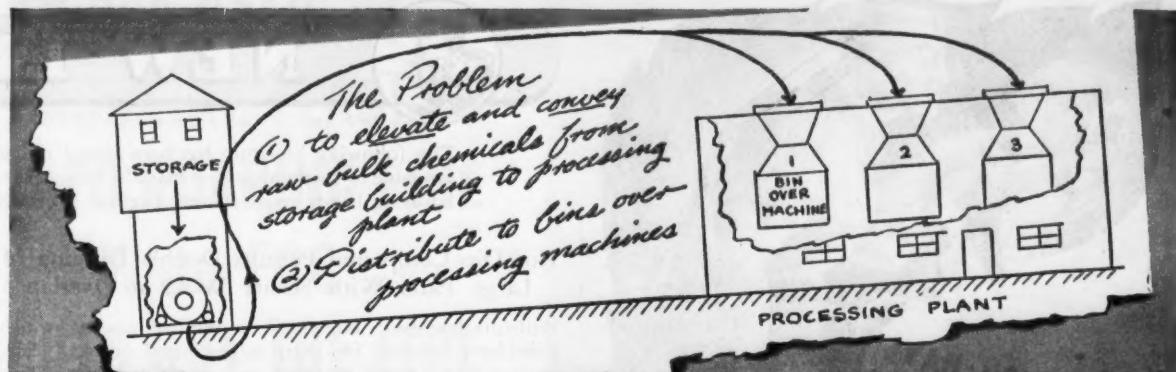
Protection & Convenience Feature Food Supplement Capsule Package

Separate bottles for mineral and vitamin capsules replace flat wax-lined box



Capsules packaged in air tight bottles with plastic top seal encountered because of the fact that vitamins and minerals cannot be packed together in the same capsule due to chemical reactions of the ingredients. The makers of the product referred to here sought improvement over the original flat-wax-lined box with cardboard divider; avoiding possibility of broken divider and consequent mixing of capsules. The product is now packaged as shown in two air-tight bottles, each complete with plastic top seal. A two color printed box lined with corrugated paper is provided for the two bottles. The product, known as "Vitaminight" is sold exclusively to industrial concerns for use by employees. (Vital Foods Corp., Evanston, Ill.)

For complete information regarding products described in this issue a handy request slip is provided between pages 2 and 3. Check the items that interest you, fill in name and address and send it to publishers. Information will come to you promptly.

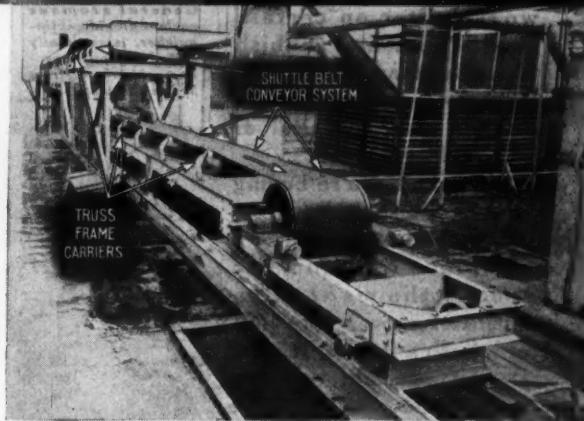


Triple play combination, left to right—Bucket Elevator up to Stationary Belt Conveyor, over to Shuttle Belt Conveyor, and thru roof hatches to processing machines.

As usual, the ability to find the right solution, plus the right equipment, resulted in the right installation for the job.

An S-A Bucket Elevator lifts the material from mixer to stationary Belt Conveyor, which carries to a Shuttle Belt Conveyor for distribution to any one of several processing machines.

The use of the S-A Shuttle Belt Conveyor, shown, permits volume distribution to several machines without a tripper and by a conveyor unit of but half the length of the distribution range . . . How? . . . The entire Shuttle Conveyor can be rolled to either side of the feed point, one end over desired discharge, and the carrying belt operated in that direction . . . another example of S-A simplicity and economy.



The comparatively short Shuttle Belt Conveyor has been rolled to one side of feed point, one end spotting over hatch at right, and carrying belt operated toward that end. Hatch covers removed to show receiving hoppers.

STEPHEN S-A DAMSON
11 RIDGEWAY AVENUE, AURORA, ILLINOIS MFG. CO. LOS ANGELES, CALIF. ★ BELLEVILLE, ONT.

Designers and Manufacturers of All Types of

When inquiring specify CP A3150 . . . see information request blank, pgs. 2-3



In the old days you might have gone to a blacksmith with a toothache. After all, he did have the pliers.

Today we ask more of a dentist. We demand that he be a specialist.

So it is with fire extinguishers. Certain types work better on certain fires. Paper and rubbish fires, for example, require an entirely different extinguisher than electrical or oil fires.

So—when you're buying fire extinguishers, buy from a firm that manufactures a complete line and can specify the right extinguisher for every fire hazard. Such a firm is General Detroit, specialist in "fire protectioneering" for more than 40 years.

IF IT'S GENERAL IT'S DEPENDABLE

ABOVE: **GD/P**
General's famous
carbon dioxide extin-
guisher, is especially
suited for oil, gaso-
line, electrical fires.
Write for details.



THE GENERAL DETROIT CORP.

2270 E. JEFFERSON AVE., DETROIT 7, MICH.

Distributors in principal cities

CHICAGO

DALLAS

NEW YORK

West Coast Affiliate: The General Pacific Corp.
Seattle • LOS ANGELES • San Francisco

When inquiring specify CP A3151 — see information request blank, pgs. 2-3



NEW LITERATURE *

The following literature has been issued recently by manufacturers of the products discussed and is available to chemical process manufacturing executives on request. Address requests to the publishers by using handy request form, pages 2-3, or write to the manufacturers direct.

Hot Dip Compound Permits Double Dipping of Large Parts With Secure Weld at Overlap

Bulletin describes "Dipwrap", a resilient coating which provides protection for sharp edged metal objects, gears, pinions, etc. against moisture and rough handling. This war-born development should find many applications in packaging, shipping and storing of tools and mechanical parts for civilian use. The coating is easily removed when the part is required for use. If the part is small and has been dipped by means of an impregnated, non-wicking string, the string serves as a rip-cord to start initial peeling. The handling of parts too large for complete submersion during dipping cycle can be double-dipped with assurance of dependable corrosion resistant weld at overlap. The bulletin contains complete tabulation on physical properties and practical suggestions on applications to specific requirements. Copies of Bulletin 14 on request.

PAISLEY PRODUCTS, INC., Dept. CP, 1770 Canalport Ave., Chicago 16, Ill.

When inquiring specify CP A3152 — see information request blank, pgs. 2-3

Equipment Units & Component Parts of Spun Metal for Processing Requirements

A data book on metal spinning, the second issued by this organization, has been designed to meet the demand for the most up-to-date information regarding the possibilities and advantages of this forming method. It tells how metal spinning is done, gives data regarding tools and metals and illustrates many intricate jobs not considered possible to form by the metal spinning process. The book features a large spread reproducing letters from various equipment manufacturers which emphasizes the wide range of processing equipment in which spun metal parts play a vital part. Of particular interest are photos and brief data on spinning of perforated metals, tank heads, tubing and sanitary tanks of all kinds in which streamlined contour, achieved through spinning, contributes to appearance and increased sanitary qualities. Copies of "Spincraft Data Book Number 2" on request.

MILWAUKEE METAL SPINNING CO., Dept. CP, 1325 S. 43rd St., Milwaukee, Wis.

When inquiring specify CP A3153 — see information request blank, pgs. 2-3

Filters for Production of Vegetable Oils From Cracklings, Soya Beans, Oleaginous Seeds

Scientific filters for improved production of vegetable oil from cracklings, Soya beans, oleaginous seeds and nuts are interestingly discussed in a four page folder. A new filter medium known as "Soytex" is described and its features explained. Known as "Soytex" this medium is made of close woven fabric possessing exceptional fineness and great strength. It is treated by a process which completely encases the fibers, giving the fabric a smooth glass-like surface. The finish reinforces the strength of the fabric and gives it longer life and improved filtering qualities. All raw edges are overcast to prevent fraying. Feed holes are carefully stitched and reinforced to prevent cloth from giving away at this critical area. Special requirements, the nature of the product and type of equipment

are considered in furnishing filters. The filters fit the individual press plates accurately. Smooth glass-like surface gives easy quick cake release; whipping the filter releases the cake. Complete information on request, concerning vegetable oil filters and other for lard and animal oils.

FILTER FABRICS, Dept. CP, 1255 W. 4th St., Cleveland, Ohio.

When inquiring specify CP A3154 — see information request blank, pgs. 2-3

Wax Fortified Interior Finishes for Use on Food Processing Plant Walls & Equipment

A handsome large size folder in full color highlights the features of a recently perfected "wax-fortified" interior finish offering distinct advantages for various requirements in food processing plants. These paints, impregnated with wax, provide finished surfaces a smooth appearance and impart great resistance to dirt and general durability. These paints have been used by large bakeries on walls and machinery. In addition to durability and appearance, the ease with which surfaces protected by these paints may be cleaned is a feature.

S. C. JOHNSON & SON, INC., Dept. CP, Racine, Wis.

When inquiring specify CP A3155 — see information request blank, pgs. 2-3

CENTRIFUGAL PUMP Reconversion Inventory Kit!

FREE-SEND FOR YOURS NOW!

Let Allis-Chalmers' new Reconversion Inventory Kit — a complete set of Fact Sheets and Check Lists for determining the condition of your centrifugal pumps help you answer these vital changeover questions . . .

■ Are my centrifugal pumps okay as is? Do they need new parts?

■ Will the pumps in my plant need replacement in the near future? Immediately?

■ How can I tell if my pumps should be re-applied, or if they're obsolete?

To Get Your FREE Reconversion Inventory Kit, covering pumps, motors, V-belt drives, call your nearest A-C office or dealer, or write Department 252 . . .

A 1897

ALLIS-CHALMERS 
MILWAUKEE-WISCONSIN

When inquiring specify CP A3156 — see information request blank, pgs. 2-3

NEW LITERATURE

Handbook of Branch Pipe Outlets

"Handbook of Branch Pipe Outlets" — just off the press. A handy pocket-size manual for men responsible for piping. This 32-page handbook illustrates and explains the four simple steps in installing full pipe strength outlets by the WeldOlet Method. Also illustrates the tools needed to make the joint, the three types of WeldOlet Fittings available for butt-welded, threaded and socket-welded branch pipes, and shows typical installations.

BONNEY FORGE & TOOL WORKS, Allentown, Pa., Dept. 208.

When inquiring specify CP A3157 — see information request blank, pgs. 2-3

Single Dip Method for Olive Drab, Black Corrosion Protection on Cadmium, Zinc

Complete details of a new process, offering a convenient and economical means of obtaining corrosion protection coatings on cadmium and zinc, are described in an attractive illustrated bulletin. This is achieved with one dip. Developed expressly for zinc and cadmium surfaces, this process produces either black or olive drab finishes which not only prevent formation of white corrosion products, but also retain the original lustre. In addition, they provide a base for paint or lacquer which is superior to that of untreated metal. Only single immersion of from 2-5 minutes is required. No special equipment, racking or current is required. Parts are handled in bulk and treated at room temperatures; maintenance and control of the solution is easy and inexpensive. Coatings produced by this "Unichrome Dip" and subjected to standard salt spray tests prevented the first appearance of white corrosion products for up to 200 hours. This descriptive bulletin is available on request.

UNITED CHROMIUM, INC., Dept. CP, 51 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A3158 — see information request blank, pgs. 2-3

Lead Plating Data — Solution Preparation, Equipment, Procedures, Analyzing Solution

Lead plating with Fluoborate Lead Solution Concentrate is practically discussed from many important angles that are to be considered in selecting lead plating solutions, in a handy file size bulletin of eight pages. Advantages emphasized in this particular product are that it is one of the simplest plating baths to install, operate and control. Concentrate and addition agent are poured into the tank and diluted with water, lead anodes installed and plating then started. The rate of deposition is high; throwing power of solution is relatively high and bath operates with 100% cathode efficiency. Preparation hazards avoided — hydrofluoric acid not used or handled. Detailed directions for solution preparation are given. There is a table on plating time required at various current densities for specific deposit thicknesses. There are also notes on equipment and procedures, most desirable thicknesses of deposits for various services and a list of present applications. Also of prime interest is the discussion of solution control and methods for chemical analysis. Among the various present and suggested uses enumerated are: gas heater flues, refrigeration brine tanks, lining for chemical apparatus, coil springs, gaskets, roofing sheet, smoke and fume stack supports, structural parts for foundries. Copies of this booklet are available upon request.

HARSHAW CHEMICAL CO., Dept. CP, 1945 E. 97th St., Cleveland, Ohio.

When inquiring specify CP A3159 — see information request blank, pgs. 2-3

10,000 GALS. OF GASOLINE FLASHES INTO ROARING FIRE and WaterFOG PUTS OUT THE FIRE



A derailed tank car . . . pulling down the high-tension wires of the electrified system . . . started a rip-roaring fire on one of the country's heaviest-traveled rail routs.

So furious was the blaze that the heavy steel towers were twisted partially from their bases and many feet of rail were warped by the intense heat. Yet a skillful attack by New Haven's fire department, under direction of Chief Paul P. Heinz plus the use of Rockwood WaterFOG nozzles, had the fire checked in 15 minutes . . . confined to a small area in 25 minutes . . . and out in 40.

WaterFOG is used extensively by the New Haven fire department for oil, electrical and other types of fires. Adequate WaterFOG equipment and thorough training by Chief Heinz in the use of this modern method of fire fighting made possible quick extinguishment of this fire.

Rockwood WaterFOG is used by hundreds of fire departments and industrial firms to guard against fires. Rockwood-engineered applications, ranging from transformers to engine test cells, from paint shops to Hortonspheres, are approved by Underwriters' Laboratories and Associated Factory Mutuals. Write for Bulletin 123. Colored movies (16 mm.) showing tests of Rockwood WaterFOG are available to business executives.

ROCKWOOD SPRINKLER COMPANY

76 Harlow Street, Worcester 5, Mass.

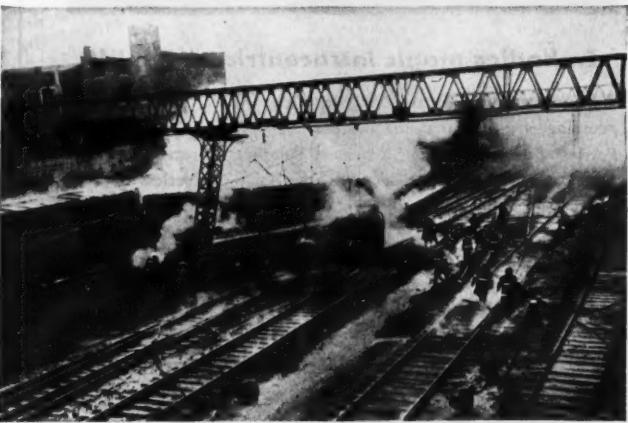
Specialists in Fire Protection Engineering, Equipment and Installation since 1907



Fire at its height when apparatus arrived

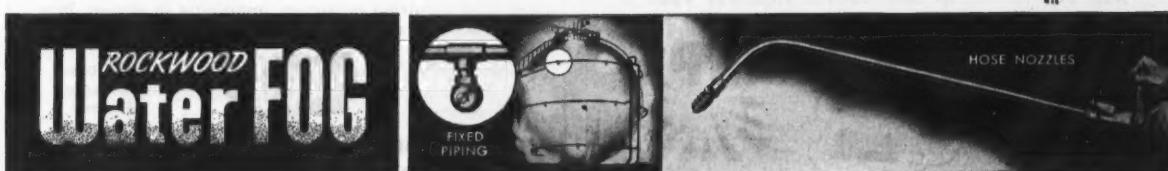


Fire under control of WaterFOG 15 minutes later



Fire out in 40 minutes

Water Engineered by Rockwood Cools. Confines. Smothers Oil Fires



When inquiring specify CP A3160 . . . see information request blank, pgs. 2-3

Peerless presents the

Water King

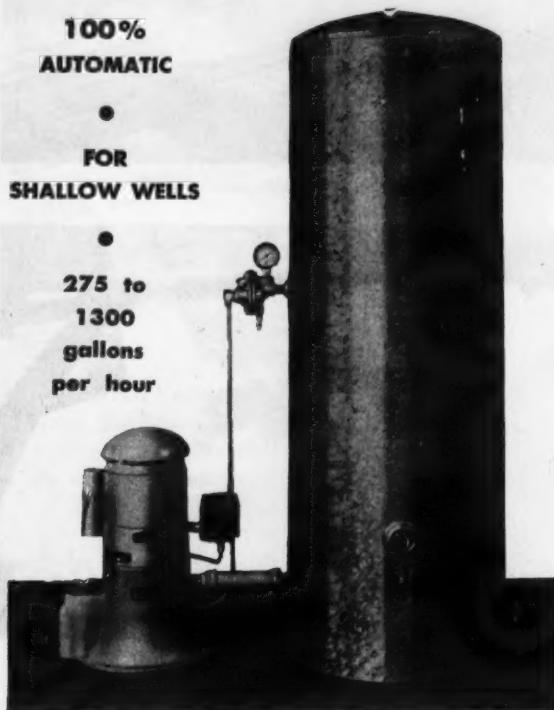
PUMPING SYSTEM

100%
AUTOMATIC

•
FOR

SHALLOW WELLS

•
275 to
1300
gallons
per hour



Embodies magic intracentric water-lift

Applying a revolutionary water-lifting principle, with a magic pumping element intracentrically positioned within the pump case, Peerless presents the most advanced Pumping System—the *Water King*. The pumping element is the famous Peerless Hi-Lift, ingeniously applied in simplest form. Pressure maintained automatically. Silent, smooth, non-pulsating operation. Pump can be installed over-well or off-set. Heavy-duty, capacitor type motor. 1/6 to 3/4 h.p. No moving parts below surface. Water-lubricated. No sand cutting. Streamline design.

Peerless JET Water System

Improved design. For deep or shallow wells. Over-well or off-set. Capacities 300 to 5000 gallons per hour. 100% automatic.

Peerless Distributors and Direct Factory
Representatives are located in every State.
Ask for name of Distributor nearest you.

PEERLESS PUMPS

PEERLESS PUMP
DIVISION
Food Machinery Corp.



FACTORIES
LOS ANGELES 31, CALIFORNIA
301 West Avenue Twenty-eleven
QUINCY, ILL. • CANTON 6, OHIO

NEW LITERATURE

Fluxes for Welding, Brazing, Soldering

Eight page bulletin lists fluxes and gives complete details as to features and applications. The selection includes fluxes for: silvering soldering ferrous, non-ferrous metals, gas welding stainless steels, for welding aluminum and its alloys; also magnesium; bronze, monel metal, etc. Service in determining special flux requirements and preparing such fluxes is available from this company.

SUPERIOR FLUX CO., Dept. CP, 913 Public Square Bldg., Cleveland, Ohio.

When inquiring specify CP A3162 — see information request blank, pgs. 2-3

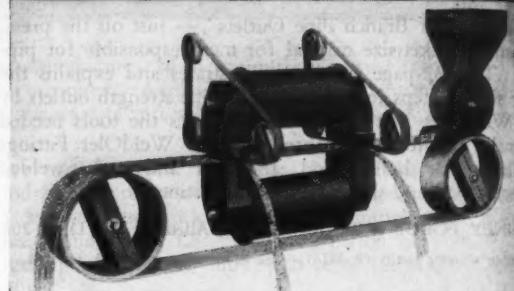
Production Instrument for Testing of Several Thousand Complete Ball Bearings Per Day

A production instrument for the testing of completed ball bearings is described in the first issue of a new Quality Control Bulletin published by Physicists Research Company at Ann Arbor, Michigan. The instrument known as the Anderometer enables the production checking of complete ball bearings for deviations of both balls and races from true circularity. Bearing manufacturers using the Anderometer report that several thousand bearings per day may be checked on it. This bulletin describes the Anderometer completely and is illustrated. Copies of the bulletin may be had on request.

PHYSICISTS RESEARCH COMPANY, Dept. 46, 343 South Main Street, Ann Arbor, Michigan.

When inquiring specify CP A3163 — see information request blank, pgs. 2-3

"PICKS" OUT FEEBLY MAGNETIC MATERIALS



DINGS

Cross Bolt
Separators

The selective "picking" principle of Dings Type E Magnetic Separators enables them to treat material having very weak magnetic properties. Horseshoe electro-magnets above and below the conveyor belt both lift and push for complete separation. Take-off belts remove iron particles from the magnetic zones.

Send today for a full description of this and other Dings High Intensity Separators.

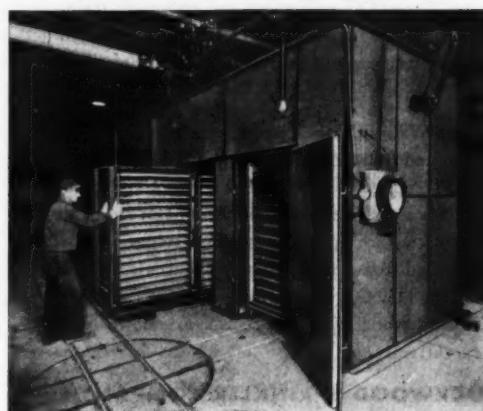
"Separation Headquarters" Since 1899

DINGS MAGNETIC
SEPARATOR COMPANY



510 E. Smith Street Milwaukee 7, Wis.

When inquiring specify CP A3165 — see information request blank, pgs. 2-3



"National" Truck Type Tray Dryers

For batch drying of various chemicals in large quantities. Recirculating system carries heated air to each tray in sufficient volume and at proper velocity to assure uniform drying of each tray load, without dusting. Illustration shows battery of dryers especially designed for material having high initial water content and requiring maximum uniformity in drying. May be steam, gas or electric heated.

Chemical Dryers
of All Types
and Sizes



Special Drying
and Heating
Equipment

THE NATIONAL DRYING MACHINERY CO.
2709 N. HANCOCK STREET, PHILADELPHIA 33, PA.

When inquiring specify CP A3161 — see information request blank, pgs. 2-3

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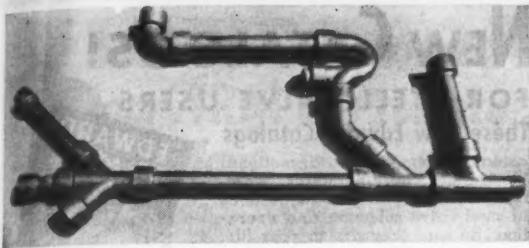
When inquiring specify CP A3164 — see information request blank, pgs. 2-3

GATE VALVES • GLOBE VALVES
Y VALVES • CHECK VALVES
LEVER THROTTLE GATE VALVES
TANK VALVES
SCREWED FITTINGS
FLANGED FITTINGS
GAUGE GLASS FITTINGS

ALLOY STEEL PRODUCTS COMPANY, INC.
100 WEST ELIZABETH AVENUE — LINDEN, NEW JERSEY

When inquiring specify CP A3166 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



Acid-Proof Pipe and Fittings

KNIGHT-WARE acid-proof pipe, valves and fittings are standard equipment in the handling of acids, alkalis and corrosive gases. Because **KNIGHT-WARE** is entirely corrosion-proof, it will handle all acids of all concentrations except HF. Also being a non-conductor, **KNIGHT-WARE** pipe is not subject to electrolytic action. It is available with either bell and spigot or flanged type connections plus a full line of fittings.

If you are building a new process plant, a new laboratory or are planning an addition to your present plant, ask your engineer and architect to specify **KNIGHT-WARE** Acid-Proof Pipe and Fittings. Specifications are contained in our Laboratory Equipment Catalog.

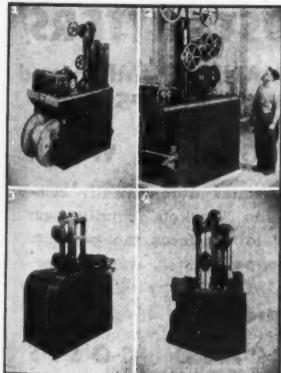
MAURICE A. KNIGHT, 411 Kelly Ave., Akron 9, Ohio



When inquiring specify CP A3167 — see information request blank, pgs. 2-3

Constant-Tension Windups Have Many Applications

Variety of materials processed at speeds up to 1500 feet per minute



Shown left are four constant-tension, variable-speed windup machines used in the saturating and coating of cords, yarns, fabrics, paper, surgical suture, fishline, V-belt cord and other continuous materials. No. 1 is a high-speed, low-tension unit which handles materials from .010" to .385" diameter at speeds up to 1500 feet per minute; No.

2 is a heavy-duty extrusion takeup for flexible materials up to 1.50" diameter, with speeds from 25 to 240 feet per minute and tensions up to 500 pounds; No. 3 is a saturating takeup which will handle materials up to .750" diameter at tensions up to 100 pounds and speeds from 80 to 480 feet per minute; and No. 4 is designed to wind flat materials up to 6" wide and .060" thick, though wider rolls are available.

Two FREE bulletins give complete information on the principle of **IOE** windup machines.

THE INDUSTRIAL OVEN ENGINEERING CO.,
Dept. CP, 11621 Detroit Avenue, Cleveland 2, Ohio

When inquiring specify CP A3188 — see information request blank, pgs. 2-3

NEW LITERATURE

Permanent Magnets For Spouts, Chutes Feature Double Gap Design; Use Alnico Alloy

A four page illustrated bulletin gives complete details of features of permanent magnet with strength of electro magnet and its performance when incorporated on spouts, etc. This magnet utilizes "Alnico" alloy. The double gap design of this "permaflux" magnet gives four strong poles of attraction over which product must travel. That is, two magnets in one, twice the efficiency of single two pole magnets. The recess in the secondary gap takes balls, nuts, etc. of spherical shape out of the product's line of flow so that they are held by the magnet. The one piece case of non-magnetic alloy insulates and seals the magnetic elements against outside magnetic attraction and tampering. An impressive test of the magnetic power is illustrated and described in the bulletin. Using a standard spring scale hooked to a one inch diameter steel ball adhering to the magnetic face, a 16 pound pull is required to release the ball. The various drawings and pictures include views showing the magnet as it appears mounted in a spout section, one showing working position, another open for cleaning. Another group shows magnet installed in chute, with hopper and frame for manual feed. Several drawings indicate installations in wood spouts, metal spouts and in feed table of hammermill. Copies of this folder on "Niagara Permaflux Magnets" on request.

THE RICHMOND MFG. CO., Dept. CP, Lockport, N. Y.

When inquiring specify CP A3169
— see information request blank, pgs. 2-3

Absorbent for Grease, Fat, Oil Spillage on Plant Floors

Four page folder describes compounds that absorb oil and grease and oil and water emulsions and that are used to keep floors dry and clean. They are non-combustible, harmless to hands. This product — "Oil-Dri" in its "all purpose" grade is suitable for use in breweries and food processing plants. "Oil-Dri" is non-acid and non-abrasive; will not scratch floors; it does not deteriorate with age and its properties are not diminished by heat or cold. It absorbs oils, greases, fats, paraffins, acids, etc. It is easy to use by spreading on floor over areas to be dried of oils, fats and other spillage. "Oil-Dri" (all-purpose grade) is packed in 50 pound bags. Literature describing this product in its various grades is available on request.

OIL-DRI CO. of AMERICA, Dept. CP, 5036 Ravenswood Ave., Chicago, Ill.

When inquiring specify CP A3170
— see information request blank, pgs. 2-3

LET GEORGE DO IT!



GEORGE IS AN "N. F. E."

N. F. E. — Niagara Filtration Engineer — a trained graduate engineer with years of actual field experience in chemical, process industry filtration and problems. Niagara Filtration has a staff of N.F.E.'s available to assist you without cost or obligation.

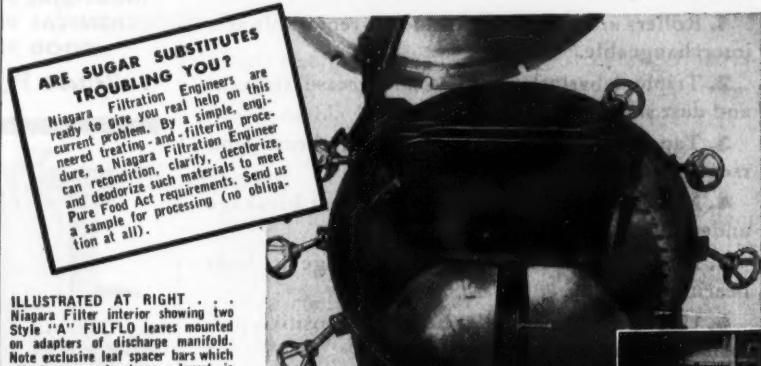
Every N. F. E. — every member of Niagara Filter's staff of trained engineers is like "George" . . . he DOES it!

Now when you're swamped with dozens of RECONVERSION problems, you can unload that filtration problem in George's lap . . . the lap of an "N. F. E." — a Niagara Filtration Engineer!

Unlike most filtration equipment, Niagara Filter Systems are usually built to order to fit the particular application — CUSTOM BUILT. Niagara Filter engineers are prepared to give you a complete engineering survey — from laboratory appraisal of the filtration characteristics of your product to the production of the daily requirements of your plant at the lowest economical operating costs. Where required, actual plant studies with Niagara's pilot equipment PRECEDE any purchase!

The delivery of your Niagara Filter System is only the beginning of a permanent relationship with Niagara engineers . . . Niagara Filter Systems can never become unused equipment — equipment bought and delivered — but never installed, never used! An "N. F. E." installs your system, operates it, instructs your personnel in obtaining the maximum of service! AND HE DOES NOT DIVIDE RESPONSIBILITY WITH ANYONE! Like George, THE "N. F. E." DOES IT.

And the benefit of new experience and knowledge gained in the chemical, food, fermentation and process industries is always available to you. Your Niagara Filter system must continue to give you uninterrupted maximum service . . . and George — your "N. F. E." — sees that it does!



ILLUSTRATED AT RIGHT
Niagara Filter interior showing two Style "A" FULFLO leaves mounted on adapters of discharge manifold. Note exclusive leaf spacer bars which afford many advantages. Insert is cut-away exterior view of a $\frac{1}{2}$ 275 All Stainless NIAGARA FILTER.

JUST OFF THE PRESS!
Write for your free copy of the new two-color, 8-page bulletin—G-345—the story of Niagara Filter Systems for the chemical, food, fermentation and process industries. It's yours for the asking.

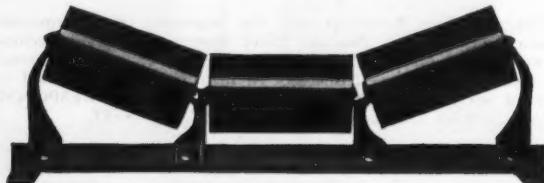
niagara filter CORPORATION
3080 MAIN STREET BUFFALO 14, N. Y.
IN CANADA...NIAGARA FILTER CORPORATION (CANADA) LTD.
FILTRATION ENGINEERS TO THE PROCESSING INDUSTRIES

When inquiring specify CP A3171 — see information request blank, pgs. 2-3



TO KEEP production lines moving—often 24 hours a day—that's industry's problem today. Delays for repairs are out.

Rex Belt Idlers help solve that problem. They assure trouble-free and uninterrupted service. Easy and inexpensive to install, they keep material flowing under the toughest conditions.



Here's why:

1. Rollers are one-piece cylinders—removable and interchangeable.
2. Triple labyrinth grease seal—grease stays in and dust stays out.
3. Tapered roller bearings take all thrust—and radial loads.
4. Malleable brackets ribbed to prevent breakage under shock.
5. Large grease reservoir with passage to both bearings.
6. Unit mounting of roller bearings—positive, permanent alignment.

For further information on this and other conveyor units, write for Bulletin No. 410. Chain Belt Company, 1694 W. Bruce Street, Milwaukee, Wisconsin.



BELT CONVEYORS

**CHAIN BELT COMPANY
OF MILWAUKEE**

When inquiring specify CP A8172 — see information request blank, pgs. 2-3

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NEW LITERATURE

Slime and Lime Scale Control in Evaporative Condensers and Evaporative Coolers

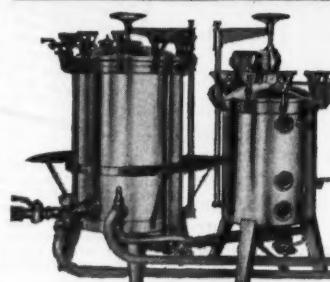
A four page special service report concerns a recently announced chemical development with lime solubilizing, fungistatic and detergent properties designed to inhibit slime growth and control lime scale deposits in evaporative condensers and evaporative coolers. The report emphasizes the difficulties encountered because of lime scale deposit on surfaces of coils or fins and on spray nozzles, spray headers and the accumulation of slime or algae on the surfaces of coils, eliminator plates or baffles, in sump tank, suction screen, etc. It points out the necessity for suitable water treatment and describes in detail the properties and applications of the water treatment method embodying use of this new material. This product is introduced under the name of "Airefiner No. 52". Methods and materials for cleaning and slime removal prior to addition of "Airefiner 52" are discussed. With evaporative condensers or coolers having sump tank, the material may be added directly to sump tank or first dissolved in a separate container and the solution added to water in sump tank. For average conditions the amount of "Airefiner" is from 1/3 to 1 ounce to each 10 gallons of water. Of interest in cases where long accumulated and heavy formation of slime deposits are encountered is the description of pressure cleaning method using a special gun. "Airefiner 52" is packed in 325 lb. barrels and in 125 lb. kegs. Copies of this report as well as information concerning individual requirements on request.

OAKITE PRODUCTS, INC., Dept. CP, 22 Thames St., New York 6, N. Y.

When inquiring specify CP A8173 — see information request blank, pgs. 2-3

INDUSTRIAL PLANTS
CHEMICAL PLANTS
FOOD PLANTS
..Your PLANT!

THERE IS NO OTHER
Filter
LIKE THIS



Illustrated are the radically different Klein Ideal Filter Leaf with discharge tubes that practically eliminate the danger of clogging.

ESTABLISHED 1909

KLEIN

FILTER & MANUFACTURING COMPANY
1275-29 SCHOOL STREET • CHICAGO 13, ILLINOIS

The Stainless Steel
KLEIN

IDEAL DIATOMACEOUS
EARTH FILTERS AND
SLURRY FEEDERS

Many important and exclusive improvements and radical innovations have been incorporated in the precision-built Klein Ideal Diatomaceous Earth Filters and Feeders. Constructed of stainless-steel they utilize a new exclusive filter principle that will bring you a new high in maximum efficiency, minimum maintenance and product uniformity.

WRITE TODAY for
full information and
the latest Klein Bul-
letin.

NEW CATALOGS! FOR STEEL VALVE USERS

These New Edward Catalogs

contain dimensional data, sectional illustrations, design details, materials and many helpful suggestions in steel valve selection and operation. Be sure they are in your file.

CATALOG 12-B Non-Return Valves, globe or angle, flanged or welding ends; 300 to 1500 lb. sp.

CATALOG 12-D Blow-Off Valves, straightway or angle, flanged or welding ends; 300 to 1500 lb. sp.

CATALOG 12-E Gate Valves. Cast steel flanged or welding ends, for service from 150 to 3600 lb.

A request on your company letterhead will bring the catalogs you desire.

THE EDWARD VALVE & MFG. CO., INC.
1230 WEST 144th STREET
EAST CHICAGO, INDIANA



Edward Valves
Forged Steel & Cast Steel

When inquiring specify CP A8175 — see information request blank, pgs. 2-3

BLACKMER ROTARY PUMPS
are **COST CUTTERS!**

Both **HAND PUMPS** and **POWER PUMPS** are

SELF-ADJUSTING FOR WEAR

"Bucket Design" swinging vanes automatically compensate for wear. When the "buckets" finally wear out, a simple replacement job restores the pump to normal capacity.

This means
LOWER PUMPING COSTS



Write for Bulletin
307 "Facts about
Rotary Pumps"

BLACKMER PUMP COMPANY
1840 Century Avenue

Grand Rapids 9, Michigan

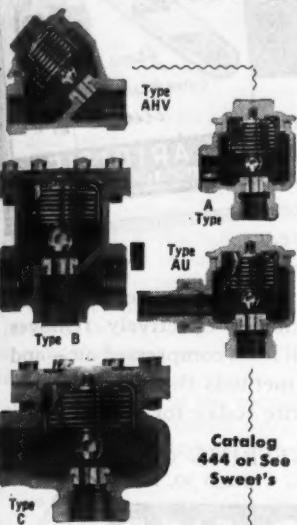
POWER PUMPS - HAND PUMPS
• EZY-KLEEN STRAINERS •

When inquiring specify CP A8176 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

NICHOLSON

Steam TRAPS Promote Plant Efficiency



War plant records proved you can depend on these widely used traps for an efficient and economical solution of peace-time plant maintenance problems.

FIVE FAST-ACTING TYPES

Sizes: $\frac{1}{4}$ " to 2". Pressures to 225 lbs. Bulletin describing exclusive engineering features on request.

W. H. NICHOLSON & CO.

181 OREGON ST.
WILKES-BARRE, PA.

When inquiring specify CP A3177 — see information request blank, pgs. 2-3

**WORRIED WITH SNAGS,
RIPS, TEARS?**

**IT CAN'T
HAPPEN
HERE!**

That's why EDMONTS are fast replacing ordinary rubber gloves on rough, tough industrial jobs. Fabric strengthens rubber coating, won't stretch or weaken at wearing points. Soft inside—gloves slip on and off easily—no tugging.

Dip-coated with specially compounded synthetic rubber. All advantages of natural rubber, plus resistance to oil and solvents. Liquid and acid-proof. Longer, safe wear with lower replacement costs. Sizes for men and women, gauntlet and knit wrist styles. Ask your jobber or write for information.

**LOOK FOR
THE FABRIC
LINING**

**Fabric-Lined
RUBBER GLOVES**

Edmont
TRADE MARK REG. U.S. PAT. OFF.

501 ORANGE ST. COSHOCOTON, OHIO

When inquiring specify CP A3178 — see information request blank, pgs. 2-3

NEW LITERATURE

Automatic Payroll Recorders and Electric Time Stamps

An automatic pay roll recorder is briefly described in a single page bulletin. The compact streamlined unit is illustrated and its numerous features listed. These include: front print mechanism, program attachment; two color registrations, tardy signal, arranged for AC or DC operation, automatic ribbon feed, automatic day to day change; bronze engraved type wheels; Parkerized parts throughout. Also of interest to food plant operators is a new feather touch electric time stamp (Model THACP). It prints the month-date-time-AM and PM in a straight line. In addition, the stamp can print company name and such words as received, paid, answered, deposited, etc. A bulletin on this time stamp is also available.

SIMPLEX TIME RECORDER CO., Dept. CP, Gardner, Mass.

When inquiring specify CP A3179
— see information request blank, pgs. 2-3

Safety Control for Diesel Engine Shut-Down

A technical bulletin announces a safety control system for the shut-down of diesel engines when the temperature of the circulating water system becomes too high, or where there is insufficient lubricating oil pressure. The bulletin contains complete information on operation, with detail drawings of general arrangements, installation and operating instructions, and ordering information. This Type R-18 control system is self-operating and requires no electrical power additional accessories.

VIKING INSTRUMENTS, INC., Dept. CP, Stamford, Conn.

When inquiring specify CP A3180
— see information request blank, pgs. 2-3

Cold Water Deaeration

Illustrated bulletin describes deaerator developed for removal of oxygen and carbon dioxide from process waters, used cold. This removal of oxygen and carbon dioxide prevents corrosive action, giving protection to equipment. As summarized on the cover of the bulletin the data concerns itself with: corrosion arresting by removal of oxygen and carbon dioxide; principal factors governing corrosion; growing need for better process water; deaerators working on vacuum principle applicable to water as low as 40 degrees F in temperature. Copies of this bulletin containing reprint of technical article are available on request. Ask for Bulletin Number 43.

COCHRANE CORP., Dept. CP, 17th St. & Allegheny Ave., Philadelphia 32, Pa.

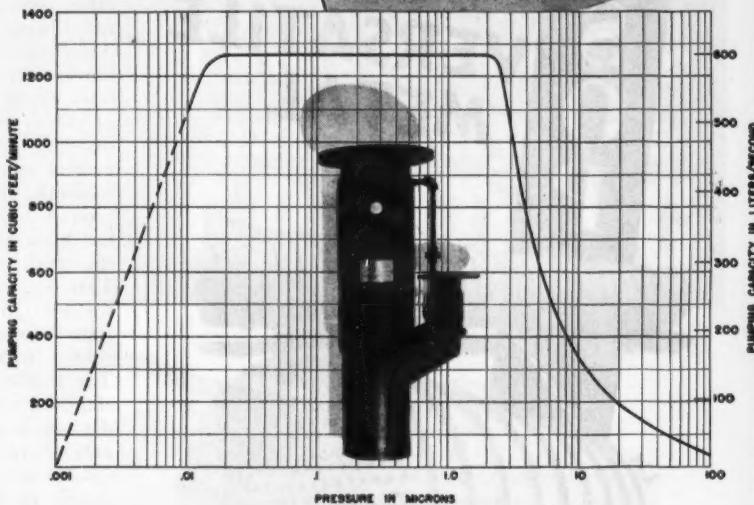
When inquiring specify CP A3181
— see information request blank, pgs. 2-3

Type H-6 . . . new high

speed diffusion

pump

No. 2 in a series on
new developments
in the field of
High Vacuum



Forepressure

unusually high operating forepressure characteristics . . . 200 microns.

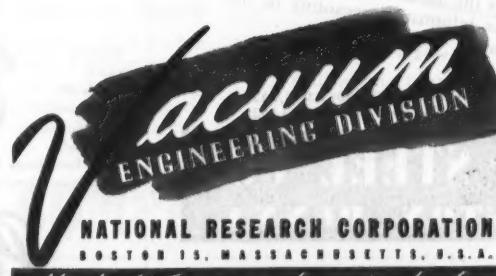
Features

high pumping speed; low backstreaming; heavy construction with flanged connections; all-metal; easily replaceable heating element.

Specifications

High Vacuum intake 6" Standard I.P.S. flange — foreline connection 2" — power supply 110-120 volts — water cooled, 1 GPM (foreline connection water cooled).

Especially designed for industrial applications where ruggedness and low maintenance costs are essential.



Complete data upon
request. Please specify
Cat. #104.

NATIONAL RESEARCH CORPORATION

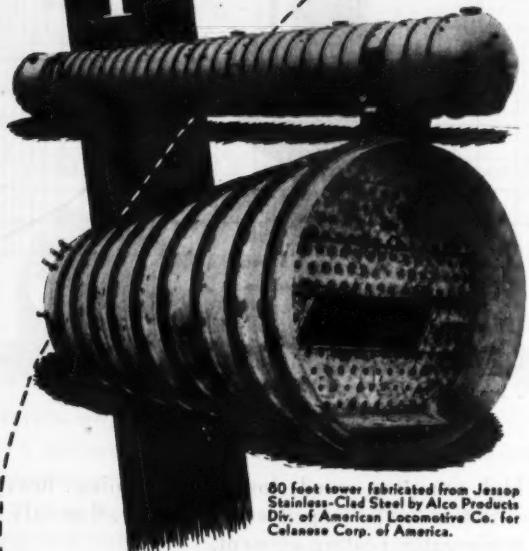
BOSTON 15, MASSACHUSETTS, U.S.A.

High Vacuum for Industry

When inquiring specify CP A3182 — see information request blank, pgs. 2-3

J
E
S
S
O
P

Stainless-Clad*
Steel
is a
VERSATILE
METAL



80 foot tower fabricated from Jessop Stainless-Clad Steel by Alco Products Div. of American Locomotive Co. for Celanese Corp. of America.

By using Jessop Stainless-Clad Steel in this 80 ft. tower it was possible to maintain a uniform thickness of stainless surface throughout . . . even though the total gauge of steel in the different sections varies according to the structural requirements. For Jessop Stainless-Clad Steel is available in controlled percentages of cladding from 10% to 50% down to $\frac{1}{8}$ " gauge and 5% to 50% down to $\frac{3}{8}$ " gauge.

By combining the properties of a stainless surface with a mild steel backing, Jessop Stainless-Clad Steel provides an economical approach to the design of equipment in which corrosion is a major problem but where the use of solid stainless is not feasible. Write for information regarding its use in your application.

*Manufactured under U. S. Pat. Nos. 1,997,538; 2,044,742; 2,147,407 and 2,225,868. Canada Pat. No. 383,153.

JESSOP STEEL CO.
WASHINGTON, PENNA.

When inquiring specify CP A3183 — see information request blank, pgs. 2-8

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NEW LITERATURE

**War Standards Permit Rating of Performance
of Industrial Gloves**

A new bulletin has recently been issued covering rubber, synthetic rubber, and plastic material gloves used for protection against acids, alkali, soaps and other organic solvents. This is one of a series for protective clothing and comprises complete data on twenty-nine standards for gloves. The safety of industrial workers handling acids and other corrosives should be increased by a War Standard for Chemical-Resistant Gloves just completed by the American Standards Association at the request of the Government. This standard sets up specifications and tests which industry can use in rating the performance of gloves made from rubber, synthetic rubber, or plastic material. These gloves are used widely in industry to protect workers against acids, alkali, soaps, and organic solvents. Rubber, which has always been the best all-around material for protection against these substances, has been almost unobtainable for this purpose during the war, and as a result substitutes had to be used. This was only half of the problem, however, for the war brought about substitutions for the hazardous chemicals themselves, so that in some cases even the natural rubber formerly used for protection was inadequate. The problems faced by the committee in setting up the standard were: (1) to work out simple tests that would determine whether or not a glove made of synthetic or natural rubber or plastic would protect the wearer against a particular hazard; (2) to spread the allotted supply of rubber as far as it would go.

Some of the tests included in the standard are for such

**Automatic Loading
BARREL TRUCK**

Not even a 1000-pound barrel load can put up an argument against this 85-lb. truck. Simply place the truck upright against barrel and slide the catch over the barrel rim. That's all. As handles are lowered the barrel is loaded and locked in the truck. Snug and secure. No rocking—no tugging.

Heavy steel construction. Two 10" wheels, riding on roller bearings. Greatest width is only 22", permitting easy passage through narrow aisles and doors.

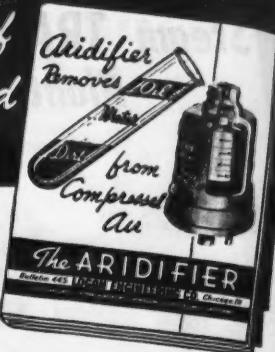
Sliding catch holds its grip until manually released. Note long hook for bilge type barrels.

Item S-911-M
\$33.50
(Metal Wheels)
Item S-911-R
\$38.50
(Molded-On
Rubber
Wheels)
f.o.b. Detroit
Order by Item Number
to avoid error.

Palmer Shile Co.
7128 West Jefferson Ave., DETROIT 17, MICH.

When inquiring specify CP A3184 — see information request blank, pgs. 2-8

**12 pages of data
for users of
Compressed
Air!**



Contamination in compressed air—its damaging effects on tools, valves and air motors—and an effective, final remedy—are comprehensively presented in this new bulletin. Shows how the Aridifier effectively removes moisture, dirt and oil from compressed air—and why it is replacing methods that provide only partial removal. Write today for Bulletin 445.

LOGAN ENGINEERING CO.
4900 Lawrence Ave., Chicago 30, Ill.

Logan ARIDIFIER
Dries and Cleans Compressed Air



When inquiring specify CP A3185 — see information request blank, pgs. 2-3

SEALED Against FUMES

No. 5421-A

For handling concentrated Sulphuric and other acids, difficult to seal by stuffing box packing . . . TABER Vertical Pumps is a logical answer.

Since liquid is not in contact with the Taber stuffing box there is no leakage.



Taber Vertical Pumps are sturdy constructed for mounting in processing or storage tank, and to operate in a vessel sealed against fumes or gases.

**PLEASE WRITE ON YOUR
LETTERHEAD FOR CONCISE TABER
Bulletin V-837**

TABER PUMP CO.
320 ELM STREET

ESTABLISHED 1859

BUFFALO 3, N. Y.

Taber Pumps for Higher
Practical Performance

When inquiring specify CP A3186 — see information request blank, pgs. 2-8

CHEMICAL PREVIEW

NEW LITERATURE

general characteristics as tensile strength, aging, loss of weight on heating, puncture resistance, and pin holes, as well as for protection against specific acids and other corrosives. The test for puncture resistance is a new one that it is believed will be easy to use and indicative of the general usefulness of the gloves. The standard, while it provides some specifications relating to dimensions, has been developed mainly as a performance standard, and is made up largely of a classification of the hazards against which chemical resistant gloves are to be used, with corresponding methods of test to determine their effectiveness. The committee which developed the standard recognized that there may be new synthetic or substitute materials which will provide further types of protection and has tried to make the classifications broad enough to embrace them all. Some experience on skin sensitivity for which there was not sufficient experience to allow standardization has been set forth in an appendix. This standard is the last to be completed in a series of standards for clothing to protect workers against various hazards. All of these have been developed at the request of the War Production Board. The completed work includes 29 standards covering leather, asbestos, and flame-resistant fabric garments and gloves. Copies of the new American War Standard, Chemical-Resistant Gloves, L18.29-1945, are available at 20 cents per copy.

AMERICAN STANDARDS ASSN., Dept. CP, 70 E. 45th, New York 17, N. Y.

When inquiring specify CP A3187 — see information request blank, pgs. 2-3

Industrial Uses of Luminescent Pigments

Booklet illustrates and describes wide variety of industrial applications of luminescent pigments, many of them unique, in such fields as plastics, automotive, textiles, jewelry, electrical appliances, etc. Copies of this literature on "Violite" pigments on request.

RHODE ISLAND LABORATORIES, INC. (West Warwick Chem. Co.) Dept. CP, West Warwick, Rhode Island.

When inquiring specify CP A3188 — see information request blank, pgs. 2-3

Fumigant for Pest Control

Folder deals with features of "Larvacide" (chlorpicrin) fumigant and its applications in rodent control. Detailed instructions for such uses as in: flour mills, warehouses, and other buildings. The fumigant is self-warning; no explosion or fire hazard. It is also an effective pest control for dealing with various insects.

INNIS, SPEIDEN & CO., Dept. CP, 117 Liberty St., New York 17, N. Y.

When inquiring specify CP A3189 — see information request blank, pgs. 2-3

Protective Coatings for Pipe Lines, Under Ground Tanks, Concrete and Metal Surfaces

Twenty page booklet presents information of practical help to those with problems where need for special protective coatings is indicated. The selection offered includes pipe enamel and primer for such steel pipe lines as may be used for oil or water; cold application coating for tanks and surfaces exposed to atmosphere and corrosive gases; coating in colors for concrete surfaces and bituminous pipe dip compound for hot dipping cast iron pipe and fittings. Copies of "Reilly Protective Coatings" on request.

REILLY TAR & CHEMICAL CORP., Dept. CP, Merchants Bank Bldg., Indianapolis, Ind.

When inquiring specify CP A3190 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

The SCHUTZ-O'NEILL PULVERIZER

Unexcelled for
extremely fine
GRINDING

of such materials as

Chemical Crystals
Dry Colors
Shellac
Alum
Nitrate of Soda
Paris Green
Milk Powder
Saltpeter
Borax
Composition Stock
Gums, Glues or any dry,
non-gritty stock

MILL PLAN No. 30 (below) shows a popular set-up for a 20-inch "D" Pulverizer with Finished Product Bin, Tubular Dust Collector and connecting pipes.

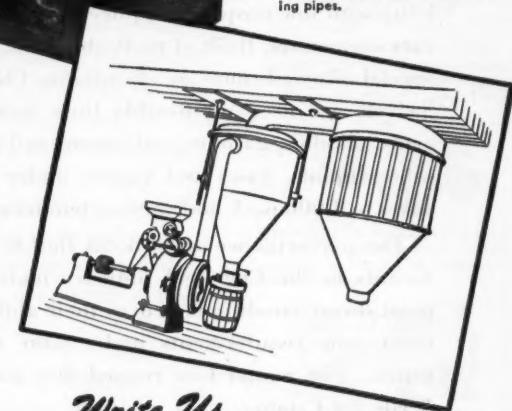


A centrifugal air force impact pulverizer for continuous or batch operation

The Schutz-O'Neill Pulverizer embodies in its design, construction and performance *more than a half-century* of successful grinding and pulverizing experience. For extremely fine grinding and uniformity, the principle of centrifugal impact when carried by the air stream has never been surpassed. The product is floated off on air—there is no screen to clog or wear out.

Thousands of Schutz-O'Neill Pulverizers have been in constant service for 10, 20, 30 years or more

The best guarantee of what a Schutz-O'Neill Pulverizer will do for you is what it has done for others, year after year in many thousands of installations. The machine has proven its sturdiness, long life, low power consumption, high output and ease of operation. With a range of sizes in several styles, any dry, grindable stock can be efficiently pulverized.



Write Us...

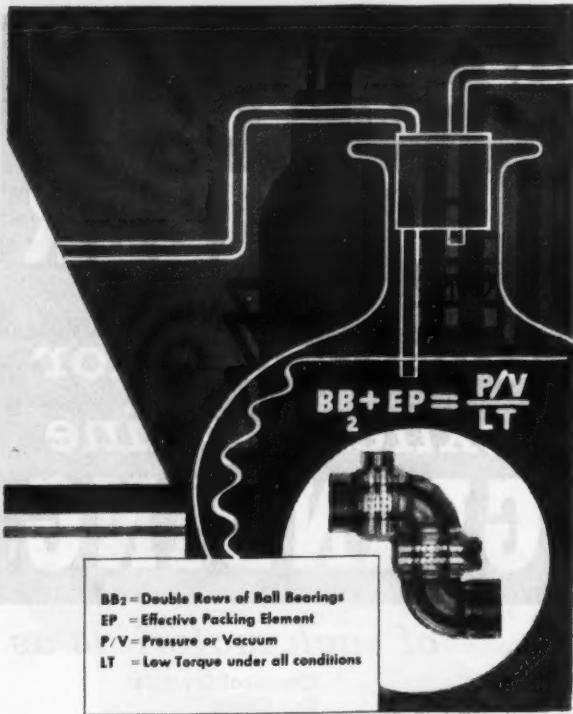
Tell us your requirements, products to be pulverized, output desired, and send a sample. This in no way obligates you. Literature sent on request.

DIVISION OF
PARTEN MACHINERY COMPANY

SCHUTZ-O'NEILL COMPANY
ESTABLISHED IN 1893

303 SIXTH AVENUE SOUTH • MINNEAPOLIS 15, MINNESOTA

When inquiring specify CP A3191 . . . see information request blank, pgs. 2-3



CHIKSAN FORMULA for PERFECT FLEXIBILITY meets Chemical Industry's demands

CHIKSAN Ball-Bearing Swivels are widely used throughout the Chemical Industry on loading and unloading lines, on process equipment . . . in every place where perfect flexibility with low torque is required under pressure or vacuum. Built of malleable iron, steel, special alloys, bronze or aluminum, Chiksan Swivels are used on flexible lines handling acids, alkalies, gasoline, oil, steam and many other liquids, gases and vapors under pressures to 3,000 p.s.i. and varying temperatures.

The performance of Chiksan Ball-Bearing Swivels in the Chemical Industry under the most severe conditions proves their ability to meet your requirements under your conditions . . . no matter how rugged they may be. Write for Catalog.

CHIKSAN REPRESENTATIVES IN PRINCIPAL CITIES

Distributed Nationally by Crane Co.



CHIKSAN
BALL BEARING
SWIVEL JOINTS
FOR ALL PURPOSES

CHIKSAN COMPANY
BELL, CALIFORNIA

When inquiring specify CP A3192 — see information request blank, pgs. 2-3

Page 68

NEW LITERATURE

X-Ray Protective Equipment; Materials & Methods for X-Ray & Radium Applications

Folder describes a selection of X-Ray protective equipment and features a composite, detailed, sectional view illustration of room showing prescribed use of lath, frame, special glass, insulated furring bars, doors, etc., that are essential to complete protection. There is a brief, practical discussion of protective measures. The text states that this company has materials and methods for all requirements and that these meet the requirements of the Bureau of Standards. In addition to many standard items including shades, blocks, frames, ventilators, lath, glass, film transfer cabinets, prepared barium plaster this organization also manufactures special protective equipment for the X-Ray laboratory. Special items available are: lead lined booths, lead lined free standing partitions (1 in. thick), lead backed steel panels, lead backed Bakelite panels, etc.

BAR-RAY PRODUCTS, INC., Dept. CP, 209-25th St., Brooklyn 32, N. Y.

When inquiring specify CP A3193 — see information request blank, pgs. 2-3

Trucks, Casters, Wheels, All-Steel Skids

Warehouse and factory trucks, casters and wheels in a wide variety are pictured and specifications listed in six page bulletin. Additional specification sheet shows all-steel barrel skids which will carry up to 1000 lbs.

THE HAMILTON CASTER & MFG. CO., Dept. OP, Hamilton, Ohio.

When inquiring specify CP A3194 — see information request blank, pgs. 2-3

MAKE ACCURATE PHOTOCOPIES OF ANYTHING! In your Office or Plant —Quickly, Easily, at Low Cost!



Save typing and drafting time—money—expedite work! Make error-proof copies—1-a-minute—of anything written, typed, printed, drawn

or photographed—even if on both sides. Get permanent, non-fading copies. No darkroom or technical knowledge needed.

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See how you can save time, money, labor, and assure accuracy with this most modern method of copying. APÉCO'S 20-page, fully illustrated book gives you the story of Photocopying—shows graphically the "what" and "how" of this amazingly simple procedure. Yours without obligation. Write, today:

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2849 N. Clark St., Dept. DK115 Chicago 14, Ill.
(Representatives in principal cities and Canada)

AMERICA'S MOST WIDELY USED PHOTOCOPY EQUIPMENT

When inquiring specify CP A3195 — see information request blank, pgs. 2-3

SHAPE BOOK

#6

The COMMERCIAL SHEARING AND STAMPING COMPANY YOUNGSTOWN 1, OHIO

Requirements for circular stampings can be satisfied in many cases by using "COMMERCIAL" Standard Shapes—as listed in "SHAPE BOOK" No. 6 . . . Write for a Copy

When inquiring specify CP A3196 — see information request blank, pgs. 2-3



Protected by

ONE Cardox Fire Extinguishing System

• The two oil storage rooms illustrated here . . . plus seven others and a long pipe tunnel . . . represent a major fire hazard in one of America's large war plants. All nine rooms and the pipe tunnel . . . 941,140 cubic feet . . . are guarded by a single engineered Cardox Fire Extinguishing System.

Here is only one of hundreds of examples of how engineered Cardox Fire Extinguishing Systems utilize fast-acting, non-damaging, inexpensive carbon dioxide to provide enhanced extinguishing performance in protecting large and small hazards. Write for Bulletin 1635. It shows why Cardox should have a place in your fire protection plans.

CARDOX CORPORATION, Bell Building, Chicago 1, Illinois

When inquiring specify CP A3197 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

NEW LITERATURE

Threadless Connection Bonds IPS Copper Tubing, Brass Pipe Into One Piece Pipe Line

A modern threadless connection — the "Silbraz Joint" — that bonds IPS tubing of copper and brass pipe into a single "one piece" pipe line is the subject of a sixteen page, two color booklet, entitled "How to Cash In on the Silver Ring." Through numerous, detailed illustrations, the reader is shown how these joints are made from patented bronze pipe fittings, valves and flanges, containing a factory inserted ring of silver brazing alloy in each port opening. Emphasis is placed on the fact that when brass or IPS copper tubing is properly inserted in these fittings and the assembly is brazed, the resulting joint is stronger than the pipe itself and in addition is leakproof and will not pull apart under any pressure which the pipe itself can withstand. Additional pictures and data show how these joints resist corrosion and vibration; how they simplify and speed-up installations, making it easy to run lines in hard to reach areas. Other sections explain the outfit for making these joints as well as for such services as joining iron and steel pipe for steam heating lines, and by means of cutting attachment dismantling and removing ferrous pipe, etc. Copies of booklet ADG — 2017 on request.

AIR REDUCTION SALES CO., Dept. CP, 60 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A3198 — see information request blank, pgs. 2-3

"Cement Gun" Applies Cement-Sand Mixture in Construction, Repair of Structures, Tanks

Repairs to concrete water tanks by means of the "Cement Gun" is one of various applications of this equipment included in a comprehensive catalog showing in great detail the many ways in which this equipment serves in construction and maintenance. The gun is also widely employed for placing refractory materials such as lining ladles; for soaking pit and furnace repair; for boiler baffles; for silica or claybrick insulation on outside of furnaces. Operations referred to here are in general performed by the company's contracting organization. "Gunite" is the name of a sand-cement mixture placed with the cement gun. "Gunite" cement and sand mixture possesses properties that make it particularly adaptable for building wall and roof construction, protection of steel from fire, repairing concrete, etc. The "Cement Gun" is operated by compressed air. Full details regarding these products and services on request.

CEMENT GUN CO., Inc., Dept. CP, Allentown, Pa.

When inquiring specify CP A3199 — see information request blank, pgs. 2-3

Labels for Chemical Shipments, Die Cut Signal System Stickers

A handy catalog and envelope of samples are available for use in selecting labels to exact requirements. The unusually complete variety includes labels for mailing, shipping, filing, warning, instruction and many die cut labels in color and size range for use in signal systems. Roll labels, dispensers, label moisteners, and gum tape dispensers are also shown.

EVER READY LABEL CORP., Dept. CP, 141 E. 25th St., New York 10, N. Y.

When inquiring specify CP A3200 — see information request blank, pgs. 2-3

Cutting Production Costs With Flash Welding

"Flash Welding — A Solution to the Assembly of Forged Parts" is the title of a four page, two-color folder describing the advantages of flash welding as a saver of machine time, stock, weight, and handling. It is liberally illustrated and data is conveniently compiled. Methods by which welded assemblies cut production costs are also described.

THE AMERICAN WELDING & MFG. CO., Dept. CP, Warren, Ohio.

When inquiring specify CP A3201 — see information request blank, pgs. 2-3



... Reflect over 60 Years of FMC Research & Engineering

Wherever water is pumped throughout the world, the name "Peerless" is familiar to ranchers, farmers, municipal and industrial plant engineers, and many others. To them, "Peerless" means pumps—Turbine, Hi-Lift, Hydro-Foil, and Centrifugal—whose advanced design, superb engineering, and mechanical perfection assure more years of trouble-free, efficient, and economical service. To them, there is no pump like a Peerless, with its many outstanding features—practically indistructible bearings and die-cast rotors, automatic lubricators assuring positive and uniform oil feed, dynamically balanced impellers preventing overload, and many others.

Such a reputation is understandable when you consider that Peerless Pumps are products of a company which has pioneered in original research and engineering since 1883. With the country's foremost research men and pump engineers, the most modern pump testing laboratories, and more than sixty years of experience to draw upon, Food Machinery Corporation will keep the name "Peerless" first in pumps.

Peerless Pumps are made by FMC's Peerless Pump Division, with factories at Los Angeles and Fresno, California; Canton, Ohio; and Quincy, Illinois.

FOOD MACHINERY CORPORATION

EXECUTIVE OFFICES: SAN JOSE 5, CALIFORNIA

Manufacturing Divisions: ANDERSON-BARNGROVER & BEAN-CUTLER DIVISIONS, SAN JOSE, CALIFORNIA • PEERLESS PUMP DIVISION, LOS ANGELES AND FRESNO, CALIFORNIA; CANTON, OHIO; QUINCY, ILLINOIS JOHN BEAN MFG. CO. DIVISION, LANSING, MICHIGAN • SPRAGUE-SELLS DIVISION, HOPESTON, ILLINOIS • FOOD MACHINERY CORPORATION, RIVERSIDE, CALIFORNIA; DUNEDIN AND LAKELAND, FLORIDA; HARLINGEN, TEXAS NIAGARA SPRAYER & CHEMICAL CO., INC., MIDDLEPORT, NEW YORK, Subsidiary of Food Machinery Corporation



THE "WATER BUFFALO" amorphous tractor hauls cargo on water and over the roughest terrain where no other vehicle can go.



FLAVORSEAL... the porous protective film sprayed over fresh fruits and vegetables, annually saves tons of produce from spoiling.



FMC ORIGINAL FOG FIRE FIGHTER... revolutionary equipment that quickly extinguishes the hottest fires without usual water damage.



INSECTICIDES AND FUNGICIDES... a complete line of chemical dusts and sprays which increase yield and quality of crops.



FOOD CANNING MACHINERY... leading canners all over America use FMC-made equipment for processing and canning all types of food.



CONTINUOUS STERILIZING LINE... (Anderson-Barngrover) used for processing over 70% of the nation's evaporated milk.

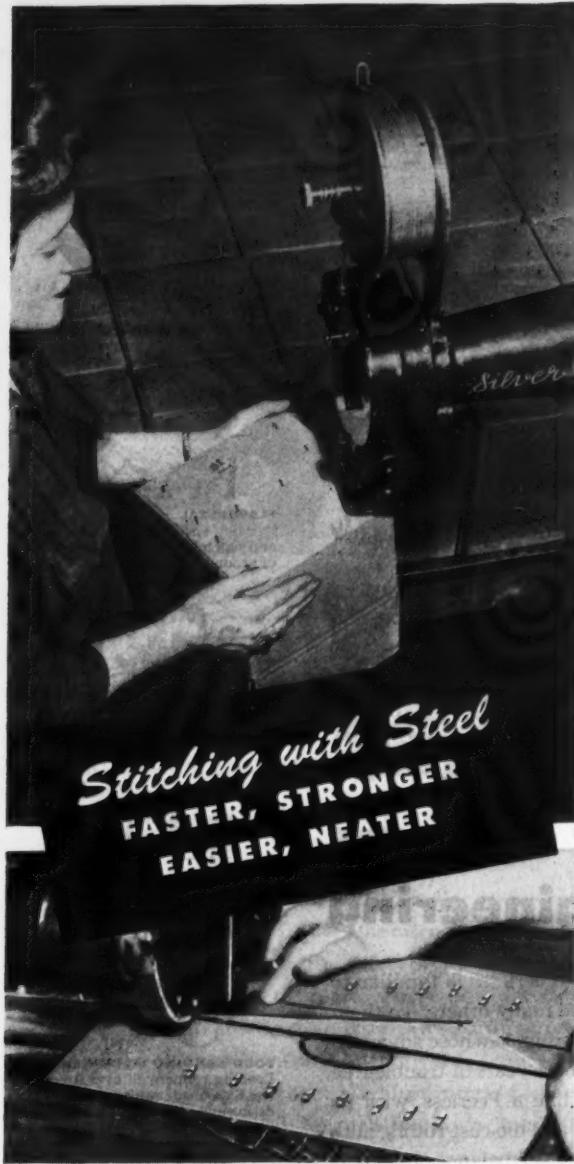


CITRUS PACKING EQUIPMENT... a complete line of equipment for processing and packing citrus and other fresh fruits and vegetables.



CROP SPRAYERS... a complete line of cropspraying equipment embodying the famed Bean High Pressure Spray Pumps.

When inquiring specify CP A3202 . . . see information request blank, pgs. 2-3



Stapling counter cards . . . tacking cloth to wood . . . stitching seams of leather gloves . . . these are only a few of many Acme Silverstitcher jobs which are done as easily, economically and speedily as stitching all types of boxboard containers.

Silverstitching is "stitching with steel" . . . automatic forming and driving of steel stitches from continuous-length coils of Acme Silverstitch stapling wire . . . combining positive fastening with attractive appearance.

For facts on the economies which Silverstitching can bring to your specific closure, tacking and fastening operations, write us. ACME STEEL COMPANY, 2808 ARCHER AVENUE, CHICAGO 8, ILLINOIS.

Silverstitch  *Silverstitchers*

ALSO MANUFACTURERS OF ACME STEELSTRAP AND STRAP APPLYING EQUIPMENT

When inquiring specify CP A3203 — see information request blank, pgs. 2-3

Page 70

NEW LITERATURE

Service Handbook Features Lubricants for Processing Plant Equipment

A lubrication service handbook describes a line of special lubricants covering the full range of industrial requirements. It describes the development of "lubriplate" lubricants which have long been and are now used in protecting equipment ranging from the most precise instruments to heavy duty rolling mill bearings. These lubricants are described as maintaining a wear resisting, load bearing film on shafts, bearings, gear teeth and other contacting and moving parts; protects machines from rust and corrosion. Included in the many lubricants described in this handbook are the fluid series among which is found lubricants for ring oil bearings, wick feeds, sight feeds, bottle oilers, speed reducers, etc. Also lubricants for various requirements in which application is by pressure gun. The Number 100 fluid grease is for direct application by hand pressure oilers. Its properties contribute to very clean application and it is therefore well adapted for many uses in food processing plants. The line includes lubricants suitable for such food processing plant equipment as industrial trucks, motors and where temperatures are high and water repellent qualities are a factor. Lubriplate No. 130 A also described may be used as an anti-seize compound; applied to pipe threads, fittings, flanges, etc., it not only makes a tight seal but permits easy disassembly of pipe without damage to joints. Copies of "Lubriplate" service Handbook on request.

FISKE BROS. REFINING CO. (Lubriplate Div.), Dept. CP, Toledo, Ohio.

When inquiring specify CP A3204 — see information request blank, pgs. 2-3

MOISTURE ENGINEERING

with the KATHABAR System
automatically and accurately provides

THE
PROPER
HUMIDITY



—independently of temperature—

for processing operations in the
manufacturing of:

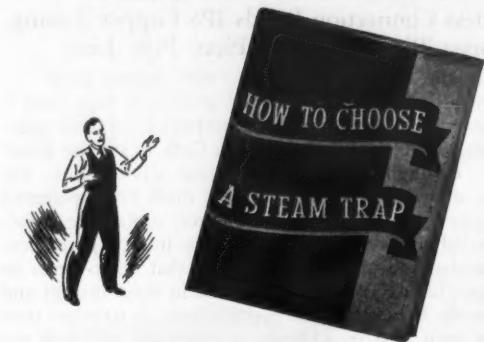
DRUGS, PHARMACEUTICALS, CHEMICALS,
FOODS, OR ANY PRODUCT OR MATERIAL
AFFECTED BY EXCESS HUMIDITY
CONDITIONS . . . Write for information.

SURFACE COMBUSTION • TOLEDO 1, OHIO

SC **Kathabar** System of
HUMIDITY CONTROL
(ADVANCED AIR CONDITIONING)

When inquiring specify CP A3205 — see information request blank, pgs. 2-3

KNOWING



is important to the engineer

That's what prompted us to ASSEMBLE all of our data—use common, easy to understand terms, and publish "How to Choose a Steam Trap". This book contains valuable information on a simplified method of Steam Trap piping. It tells how to figure condensation rates . . . how to remove moisture from air and gas equipment, etc. It's yours merely for the asking. Write today.

THE V. D. ANDERSON COMPANY
1934 West 96th Street • Cleveland 2, Ohio

Super-Silvertop STEAM TRAPS

When inquiring specify CP A3206 — see information request blank, pgs. 2-3

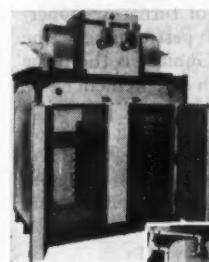
Catalog No. 114 Tells How

GEHNRICH OVENS DRY MATERIALS

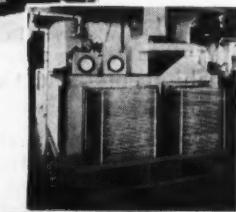
More Uniformly • Faster
at Lower Cost

Get the facts on truly uniform heating or drying of chemicals, colors, abrasives, ceramics, and other process materials at minimum cost and time.

The story of fuel-fired, electric or infra-red heated Gehnrich Oven installations gives you many correct answers to drying problems.



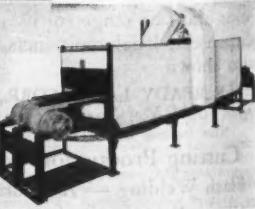
Electric,
shelf-loading
2-compartment
oven.



Steam-heated,
tray-loading,
intermittent
automatic
conveyor oven.



Oil-fired, tunnel type, multiple-truck-loading oven.



Electric, continuous double belt conveyor oven.

Write for Catalog Today

GEHNRICH OVEN DIVISION - W. S. ROCKWELL CO.
220 ELIOT ST.

FAIRFIELD, CONN.

When inquiring specify CP A3207 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

**Here's Money-Saving Protection
For Your Compressed Air Operated
Machinery and Instruments**

Now, regardless of volumes required or fluctuating pressures, the new Bird-White Pur-O-fers completely and effectively remove all moisture, oil, dirt and other foreign matter from compressed air or gas lines—preventing costly corrosion and gumming in compressed air-operated machinery and instruments.

Operating on the principle of centrifugal action, a high speed Turbo-rotor forces the tiny particles of foreign matter outward where they are trapped and drained off.

Single units can accommodate up to 100 cubic feet. Above this range multiple units are recommended.

New applications for Bird-White Pur-O-fers are being developed every day. Write for Bulletin No. 10 giving complete information.

BIRD-WHITE COMPANY
Dept. CP, 3120 West Lake Street
Chicago 12, Illinois



PATENTED

When inquiring specify CP A3208 — see information request blank, pgs. 2-3

**A New RUST-RESISTING UNIT
for FLUORESCENT LIGHTING in
DAMP and DUSTY Locations**

BENJAMIN "TX-40"

The one-piece all-porcelain-enamel unit



Available for 2 and 3-40 watt Lamps
with Conventional or Instant Starting Ballasts

Rust and other problems due to humidity and dust meet their master in the new Benjamin "TX-40". Now, even the most humid locations can be economically provided with fluorescent illumination through lighting units especially designed and constructed for such purposes. The one-piece all-porcelain-enamel construction of the "TX-40" provides durability and long life operation not possible with ordinary units. For data on this and other Benjamin Fluorescent Equipment write Benjamin Electric Mfg. Co., Des Plaines, Illinois. Dept. K1

When inquiring specify CP A3209 — see information request blank, pgs. 2-3

NEW LITERATURE

**Tabulating & Packaging Machine
for Tablets, Capsules, Mints**

An illustrated brochure explains the outstanding features of a simplified high speed automatic tabulating and packaging machine that handles a wide range of tablets, capsules, mints and similar products. The unit is especially adapted for smaller packaging operations involving materials mentioned. The complete machine includes one adjustable bottle rack and one counting board. The adjustable rack has a 36 bottle capacity and will hold 1½ oz.-5 oz. (inclusive) containers. Bottles such as A, B, and CC rounds, French Square, etc. are easily accommodated in this device. Standard machines are 32 inches long, 16 inches wide and 12 inches high and are constructed of laminated wood, strongly reinforced to hold perfect alignment at all times. The floor of the box is covered with plate glass. Handsewn brushes at front and rear of machine are adjustable on springs; nothing to wear out. Built-in device in bottle racks makes them adjustable to any height and width of bottle. A similar unit is also available for packaging larger amounts of tablets, etc. up to 32 ounces. Copies of brochure and further information on request.

C. L. OTTAWAY MFG. CO., Dept. CP,
Monrovia, Calif.

When inquiring specify CP A3210
— see information request blank, pgs. 2-3

**Masks for Protection Against
Plant Dusts Weigh 1/2 Oz.**

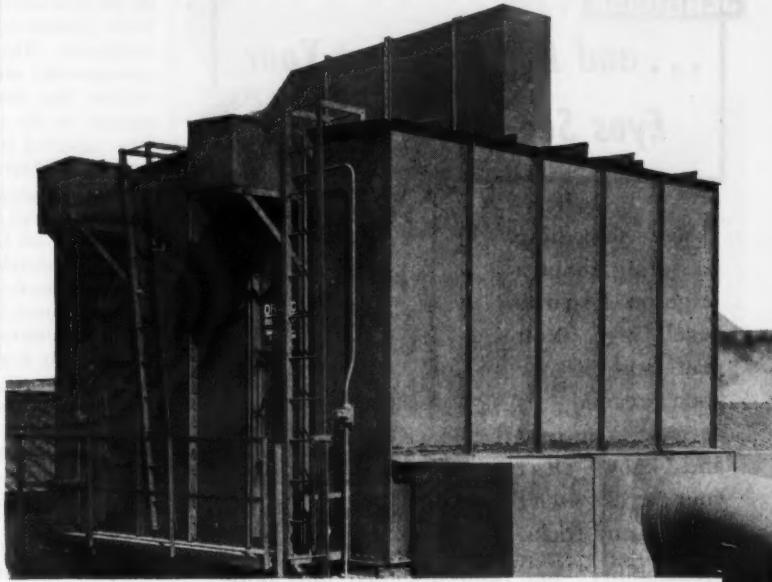
A protective mask for use by workers exposed to industrial dusts is described in small illustrated folder and the various applications listed include its use in grain handling operations, flour, straw, hay, seeds, linseed, salt, fertilizers (certain classes), sugar (certain operations), most spices and coffee. The masks weigh less than ½ ounce. They are made of soft rolled aluminum so pliable that they fit closely over the nose and mouth. The filter pads or refills consist of non-absorbent cotton web (similar to absorbent cotton) between two layers of cotton gauze. All skin irritation is avoided as the clean cotton gauze only, comes in contact with the face. The masks are very inexpensive, as are refills, thus making them readily available to all workers who may be exposed to the various types of dusts specified. Copies of booklet on request.

MARTINDALE ELECTRIC CO., Dept. CP,
Box 617, Edgewater Branch, Cleveland 7,
Ohio.

When inquiring specify CP A3211
— see information request blank, pgs. 2-3

A DUST-FREE PLANT

produces Cheaper and Better



Consult DRACCO Engineers

In the face of severe competition a DUST-FREE plant has the advantage over a plant struggling with a dust hazard. One outstanding fact is that dust **ALWAYS** causes a loss and that DRACCO Dust Control **ALWAYS** saves money. DRACCO Dust Control provides better working conditions — by eliminating dust, equipment lasts longer and requires less maintenance. Everything else being equal, a DUST-FREE plant produces cheaper. DRACCO Engineers have over 30 years experience handling dust problems of every description. Why not consult them?

For Further Information Write

DRACCO CORPORATION

4060 E. 116th St., Cleveland 5, Ohio New York Office: 130 W. 42nd St.

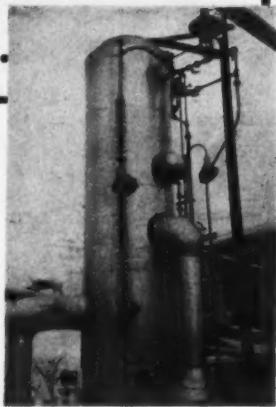
**DUST CONTROL EQUIPMENT
PNEUMATIC CONVEYORS • METAL FABRICATION**

When inquiring specify CP A3212 — see information request blank, pgs. 2-3



Check the Level

... and Believe What Your Eyes See...



There's something reassuring about a Jerguson Liquid Level Gage. You read and know your reading is correct. You read and know that your eyes aren't playing any tricks.

"Readability" has been designed into both Reflex and Transparent Types of Jerguson Gages. The Reflex Gages produce that contrasting black-white effect, visible at considerable distance. The Transparent Gages give good "show-through" lighting effect which is particularly useful when the color or condition of the liquid must be observed.

Yes, Jerguson Gages are exceptionally "readable". And they're durable, too, being designed and constructed to withstand high temperatures, high pressures and corrosion. Our nearest representative will be glad to give you further information.

JERGUSON GAGE & VALVE CO.

90 Fellsway

Associated Valve & Engineering Co.
510 N. Dearborn Street
Chicago, Illinois

Bushnell Controls & Equipment Co.
117 West Ninth Street
Los Angeles, California
and

220 Bush Street
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Arthur Fershty Company
500 First Ave., South
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and

921 S. W. Oak Street
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Daniel Orifice Fitting Co.
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Desco Corporation
Second & Welsh Streets
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W. D. Emery Co.
426 McElroy Building
Tulsa, Oklahoma

Mr. J. Arthur Moore
342 Madison Avenue
New York 17, N. Y.

O'Brien Equipment Co.
2832 Olive Street
St. Louis, Missouri

Peacock Brothers Limited
P. O. Box 6070
Montreal, Quebec, Canada

Smith Instrument & Equipment Co.
1900 East Jefferson Avenue
Detroit, Michigan

When inquiring specify CP A3213 — see information request blank, pgs. 2-3

NEW LITERATURE

One Man Automatic System Produces Forty-Two Tons of Ice Daily at Minimum Cost Per Ton

How a one man automatic ice system produces 42 tons of ice daily is described in recent issue of house organ (The Frick System — August-Sept.) of manufacturer of ice machinery. The plant in question was built years ago and was operated on the absorption system. When it became evident that that plant could be operated to better advantage on the compression system, using electric drive, it was converted to the present one man arrangement. Due to certain shortages it has to be operated the first year without an air agitation system. When the plant was redesigned it was expected that the engineer tank man would have to be on the job 12 hours a day seven days a week but it has developed that the work can be handled in 10 hours and in 8 if necessary. The one combination engineer and tank man keeps all the machinery running, handles the water treatment, freezes, harvests and scores all the ice and delivers it to the storage. Operation is so smooth that the same man, with the aid of semi-automatic and fully automatic machinery could produce 50-60 tons daily, single handed. The ice is harvested in grids which lift a whole row of 28 cans at a time by means of a two motor crane. The ice after leaving the dump comes to rest on a heavy conveyor which moves slowly. Ice slides down ramp at end of conveyor and is guided by bumper rails and enters scoring machine small end first. The bumpers are padded with solid rubber taken from truck tires. The scorer is started automatically by the block as it enters. The machine also up-ends the ice, trims off the top and

L-B LIQUID VIBRATING SCREENS Turn Waste Into Profits



L-B screen separation improves product quality and converts solids into feed in this citrus feed mill.

NO MATTER how difficult your problem of separating liquids and solids may be, it will pay to learn what the L-B Liquid Vibrating Screen can do in your plant. Removal of unwanted solids—recovery of solids for conversion into profitable products—separation of greases and oils—dewatering of foods and chemicals—this efficient screen does all these. It saves by cutting costs and reducing waste wherever used. WRITE for illustrated Book No. 1977.

LINK-BELT COMPANY

2045 West Hunting Park Ave., Philadelphia 40
Offices in principal cities



LINK-BELT Vibrating SCREENS

When inquiring specify CP A3215 — see information request blank, pgs. 2-3

HANDLING + Processing + HANDLING + Assembling + HANDLING
+ Packing + HANDLING + Storage + HANDLING



HUMAN EFFORT increases in direct proportion to the size and weight of loads moved by hand. Mechanical handling requires no extra manpower to move bigger loads. One man, directing power equipment, can accomplish far more work in much less time. Write Towmotor Corp., Div. 7, 1226 East 152nd St., Cleveland 10, Ohio.

ASK FOR TOWMOTOR DATA FILE

TOWMOTOR
THE ONE-MAN-GANG

When inquiring specify CP A3214 — see information request blank, pgs. 2-3

WIRE PRODUCTS

STRAINERS

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FILTERS

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DIPPING
BASKETS

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WIRE
CLOTH

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FABRICATED
PARTS



Adequate facilities available to handle your requirements for wire-mesh and wire fabricated products. Every operation from drawing and weaving to finished product is done in a Jelliff plant — service and quality assured.

Lektmesh the mazing product of 1,000 uses — electrolytically deposited wire mesh in varying sizes and patterns. Write for literature.



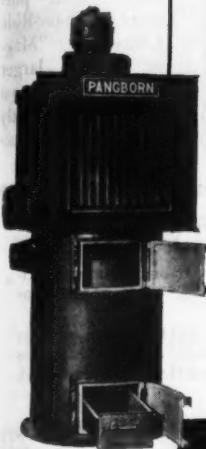
THE C. O. JELLIFF MFG. CORP.

42 Pequot Road, Southport, Conn.

When inquiring specify CP A3216 — see information request blank, pgs. 2-3

DUST PROTECTION

by the "package"



PANGBORN

World's Largest Manufacturer of
Dust Control and
Blast Cleaning Equipment

When inquiring specify CP A3217 — see information request blank, pgs. 2-3

Perfectly PRACTICAL...
Practically PERFECT
For Piping Chemical Products
SARAN*
THERMOPLASTIC
PIPE AND FITTINGS

Here's a complete piping system that offers advantages to chemical plant and laboratories. Saran is highly resistant to alkalies and acids... Water—and heat up to 175°—do not affect it. Tough, flexible Saran weighs only $\frac{1}{4}$ as much as standard iron pipe. Acadia engineers will gladly help you to determine where and how you can use it.

ACADIA DIVISION, WESTERN FELT WORKS
4035-4117 Ogden Avenue, Chicago 23, Illinois

Branches in All Principal Cities

* Licensee of the Dow Chemical Co.

ACADIA

Processors of Synthetic
Rubber and Plastics
Sheets • Extrusions
Molded Parts

Synthetic
PRODUCTS

When inquiring specify CP A3218 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

NEW LITERATURE

directs it to conveyor which takes it into dry storage. The scoring machine then stops with the chain dogs in proper position to receive the next block of ice. The way in which the conveyors are tied in with the scoring machine saves handling blocks. Ice quality is good, not over 1% normally white. Complete information concerning such installations and equipment including controls, compressors, agitator and various units of the system (for making either clear or white ice) on request.

FRICK CO., Dept. CP, Waynesboro, Pa.

When inquiring specify CP A3219 — see information request blank, pgs. 2-3

Catalog Contains Data on Acetals, Sulfur Compounds and Plasticizers

The twelfth edition of the catalog "Synthetic Organic Chemicals" has recently been issued and presents in condensed form current information on properties, uses, and specifications of more than 160 products, 34 of which were not included in previous issues and there are new chapters on acetals, sulfur compounds, polyethylene glycols, hydroxyethyl cellulose, and plasticizers, making this catalog of great value as a reference manual of aliphatic chemistry. Physical property data is most complete and conveniently tabulated. A product and application index also provide for quick reference to desired information. Copies on request. Catalog is Number F-4372.

CARBIDE & CARBON CHEMICALS CORP., Dept. CP, 30 E. 42nd St., New York.

When inquiring specify CP A3220 — see information request blank, pgs. 2-3

Data on Dimensional Stability Tests on Cellulose Plastics

One of the outstanding improvements in plastics, that speeded-up war research has been responsible for, is better dimensional stability. A new technical booklet, which lists and describes the results of dimensional stability tests on cellulosic plastics at high temperatures and high humidities, has recently been issued.

The data indicate that high acetyl cellulose and cellulose acetate butyrate have similar dimensional stability when exposed to testing conditions simulating temperate and tropical climates, while ethyl cellulose plastics have superior dimensional stability.

To make the tests, each cellulose material, in formulations of varying degrees of hardness, was injection-molded in heavy bars, medium disks, and thin strips, and extrusion-molded in thin strips.

Color sketches, photographs, four comprehensive tables, an explanation of test conditions, and a discussion of data contained in the sketches, photographs, and tables make this booklet a comprehensive source of engineering data. Interest in dimensional stability of plastics has been greatly intensified since the war started, because of military requirements.

Before the war, the emphasis in plastics was on beauty and glamour. Since the war, the emphasis has shifted to strength and endurance. The new approach has brought about the development of properties which will make for better postwar plastics.

The cellulosics, which comprise the largest thermoplastic family in the plastics industry, have played a leading role in war-time plastics development and are expected to play a prominent role in the postwar plastics field.

HERCULES POWDER CO., Dept. CP, Wilmington, Del.

When inquiring specify CP A3221 — see information request blank, pgs. 2-3

PREVENT TANK RUSTING Electrically

Modern, service-proved Rusta Restor method...using safe, low voltages...gives lasting protection...for the cost of just one good paint job.

Like hundreds of others from coast to coast, your tanks too can get lasting protection against rusting with Rusta Restor. Not a "magic" but the thoroughly proven cathodic (i.e. electrical) process, Rusta Restor maintains the tank in an "electro-negative" or "neutralized" state that prevents rusting. Modest in first cost... Uses the current of only one light bulb. Send for full details today.

RUSTA RESTOR

THE PROVEN CATHODIC (I. E. ELECTRICAL) RUST PREVENTIVE
A DIVISION OF

THE JOHNSTON AND JENNINGS COMPANY
855 ADDISON ROAD • • • CLEVELAND 14, OHIO

OCECO VAPOR CONSERVATION AND FIRE PREVENTION EQUIPMENT FOR VOLATILE LIQUID STORAGE TANKS STOVE STOKERS HAMMERED FORGINGS

When inquiring specify CP A3222 — see information request blank, pgs. 2-3

"Roller-type" JAR MILLS



Easier to use
Safer to handle

"U. S." roller-type Jar Mills are tops for low cost grinding or mixing. No clamping into frames. Set the jar on the rubber rollers—and let it roll. Standard sizes will accommodate one, two, three or four, 1, 1½, or 2 gallon size jars. Revolving speed about 50 RPM. Illustration shows Fig. 296-C, Cabinet style Jar Mill. Write for catalog 256.

U. S. STONWARE

Process Equipment Division
AKRON 9, OHIO

When inquiring specify CP A3223 — see information request blank, pgs. 2-3

Page 73



THIS NEW AJAX COUPLING CATALOG *just off the presses!*

Every man who designs, builds, sells, operates, or maintains direct-connected machinery is invited to get a personal copy of this new catalog covering Ajax Flexible Couplings.

It gives latest working data on all types including Standard, Mill Motor (taper bore), Shear Pin, Bolt-on, Brake Drum and Detachable Hub Couplings.

Phone your nearest Ajax Flexible Coupling representative or write direct to

Patents Make Jobs

AJAX FLEXIBLE COUPLING CO. INC.

Incorporated 1920

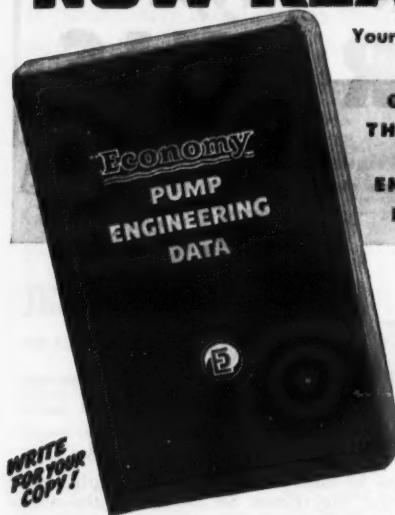
WESTFIELD, N. Y.

When inquiring specify CP A3224 — see information request blank, pgs. 2-3

NOW READY

Yours for the asking

**GIVES YOU
THE ANSWERS
TO PUMP-
ENGINEERING
PROBLEMS**



A timely contribution to industry—416 pages of factual data just when vital post-war pump problems require authentic facts, sound experience and advanced engineering practice.

Indispensable to Executives, Engineers, Plant Managers, Maintenance Men, etc. Sent free in response to requests on business letterheads.

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Title.....
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ECONOMY PUMPS, INC.
HAMILTON, OHIO • U.S.A.

When inquiring specify CP A3225 — see information request blank, pgs. 2-3

Page 74

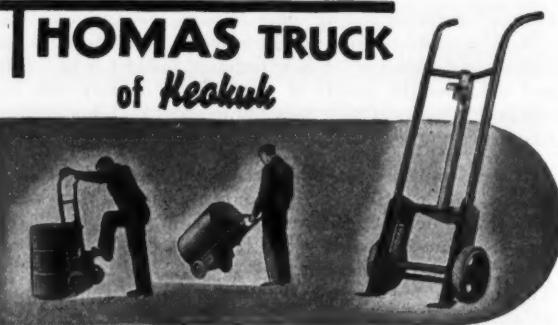
NEW LITERATURE

Ultra-violet Lamps For Preservation and Detection of Adulteration, Spoilage

"Sterilaire" lamp units for ultra-violet radiation are fully described in illustrated bulletin which explains in detail the wide application of these units. The tubes are of glass made especially to screen out undesirable and inefficient rays. The production of desirable rays of high intensity plus filtering through the special glass tubing is responsible for high efficiency as bacterial killing agent. More than eighty percent of all the rays lie within the band between 2400 and 2800 Angstrom units. The selection of lamps offered includes models for use in refrigerators with operating temperatures of around 40°. These models utilize hair pin type tube of special glass and reflector with insulated wall to maintain warm blanket of air about tube, transformer in a housing containing the electrode bushings, switch, fuse, connecting cord and constant temperature device. Other type is for sterilization of air under normal temperature conditions and not suitable for refrigeration use. These are used for air sterilization in food canning, packing, preserving, etc. Another piece of literature of interest in connection with ultra-violet sterilization is a reprint of an article on "Fluorochemistry in Food Science". This discusses the detection of adulteration, impurities, spoilage and filth by means of ultra-violet methods. It contains a most complete list of ultra-violet appearance of foodstuffs under examination. Copies of this literature are available on request.

ULTRA-VIOLET PRODUCTS, INC., Dept. CP, 5205 Santa Monica Blvd., Los Angeles, Cal.

When inquiring specify CP A3226 — see information request blank, pgs. 2-3



Safety One Man BARREL TRUCK

- Trucker never touches barrel
- Automatic loading and unloading
- Sliding two-in-one chime hook
- Safe — no backstrain
- Balanced — truck carries load
- Easy rolling — Hyatt bearings
- Lifetime use — welded steel

A Clinch for One Man

Safer, faster, easier way for one to handle barrels, drums, kegs up to 1000 lbs. Chime hook engages rim and cast steel prongs slide under drum. Instant truck pulls truck back. That's all there is to it! Rubber tired wheels. Available now.

Send for Complete Literature

THOMAS TRUCK & CASTER CO.

1800 MISSISSIPPI RIVER, KEOKUK, IOWA

When inquiring specify CP A3227 — see information request blank, pgs. 2-3

Conveyor Magic



FILCO Easy-Ride Conveyors eliminate wasteful handling and offer extra space for other vital purpose. Easy-Ride Conveyor "Magic" spells larger profits for you through greatly increased production movement.

FLEXIBILITY Engineered Feature of EASY-RIDE

This modern gravity conveyor is both portable and adjustable to suit your specific needs at any moment. Scientifically designed to handle boxes, cases and cartons quickly and efficiently.

For your FILTERING needs use FILCO filter presses; and "Germ Free" filter paper, cloth, felt, and asbestos pads. For storage and mixing use FILCO stainless steel, and glasslined tanks.

The FILTER PAPER Co.
83 E. 24th St.
Chicago 16, Illinois



When inquiring specify CP A3228 — see information request blank, pgs. 2-3



Speed changer and start-stop button may be placed at any convenient point to which wiring can be run. Thus controls are always within easy reach — production is increased with less operator fatigue. There are no intermediate speed changing devices — machine design is simplified. Write for Bulletin 311.

RELIANCE ELECTRIC & ENGINEERING COMPANY

1067 IVANHOE ROAD

CLEVELAND 10, OHIO

Sales Offices in Principal Cities

When inquiring specify CP A3229 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

DANGEROUS HANDLING...MADE SAFE WITH ADEQUATE SKID PLATFORM AND SEMI-LIVE SKID FACILITIES



Write For Bulletin 40

IRONBOUND BOX & LUMBER CO.

Materials - Handling Division

35 HOFFMAN PLACE

HILLSIDE, NEW JERSEY

SKID PLATFORMS SEMI-LIVE SKIDS FLOOR TRUCKS



When inquiring specify CP A3230 — see information request blank, pgs. 2-3



New Non-Slip Finish

Stanzoil Gloves

assure better work, lower cost hand safety

Objects wet with dangerous liquids are safely held by Stanzoil glove protected hands. Remarkable new non-slip finish adds assurance, speed to work, prevents costly hand injuries. Employees like the flexible comfort. You like the low cost — Stanzoils last 3 to 7 times longer in oils, acids, caustics. Standard sizes, styles, weights — black, white. For better employee relations, more production, less expense, buy Stanzoils. Write for new catalog today.



Synthetic Rubber Division
THE PIONEER RUBBER COMPANY
239 Tiffin Rd., Willard, Ohio, U.S.A.
New York • Los Angeles

OVER 25 YEARS OF QUALITY GLOVE MAKING

When inquiring specify CP A3231 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER. 1945

NEW LITERATURE

Stainless Steel Socket Welding Pipe Fittings 1"-14"

Specification shown includes diagrams and a complete dimension table covering socket-welding pipe fittings in stainless steel in full size range from 1" to 14". The immediate advantage secured through the use of this type of fitting is the saving of weight by elimination of flanges and bolts used in the larger pipe sizes. The use of these socket welding fittings also makes possible in many cases the use of lighter gauge tubing or fabricated pipe rather than heavier walled flange pipe which may often be heavier than actually required by the service to which it is put. The fitting lends itself well to field installation. The makers call attention to the fact that although the socket weld fitting has its limitations — the socket joint on the inside presents some difficulty in regard to corrosion in certain services — it offers great advantages in many cases. Copies of specification sheet on request.

ELECTRIC STEEL FOUNDRY CO., Dept. CP, Portland 10, Oregon.

When inquiring specify CP A3232
— see information request blank, pgs. 2-3

Application of Air Recovery Equipment to Installed Systems Saves Fuel

Data folder contains an interesting case history on the application of air recovery equipment to an existing system. Facts, figures and installation drawings tell how fuel, energy and equipment were saved. In addition, the folder offers data on ventilation requirements and a typical cost comparison chart showing the savings in money, material and equipment on a new installation. The folder is of standard file size and may be kept for ready reference.

W. B. CONNOR ENG'G. CORP., Dept. CP, 114 E. 32nd St., New York 16, N. Y.

When inquiring specify CP A3233
— see information request blank, pgs. 2-3

Lead Valves and Lead Lined Valves

Forty-four page catalog gives highly detailed information on lead lined valves of great practical value in determining requirements and selecting units to meet them. This wide selection is grouped in four general classifications: (1) Solid Lead valves; (2) Lead lined cast iron valves; (3) Lead Lined Steel Valves; (4) Lead lined valves with bodies of special composition. Under the heading "General Features" are brief paragraphs on design and construction.

AMERICAN SMELTING & REFINING CO.,
Dept. CP, 120 Broadway, New York 5, N. Y.

When inquiring specify CP A3234
— see information request blank, pgs. 2-3



• Step by step, through the process of converting nature's raw materials into delicate, sheer hosiery, moving air does many important jobs. Conveying materials, mixing chemicals, aerating and agitating liquids . . . all these are speeded by the simple act of blowing air.

Much of this work is done by Roots-Connersville blowers. Not only for hosiery and other textiles, but in many chemical and synthetic processes, R-C units are depended upon to do their share for profitable production.

Even long before we dreamed of these modern materials, R-C blowers were used for:

Manufacturing explosives
Pneumatic tube systems
Coal treating
Priming centrifugal pumps

Playing pneumatic calliopes
Vacuum filtration processes
Foundry cupolas
Testing toy balloons

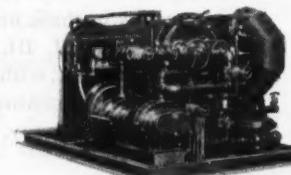
Success of Roots-Connersville rotary positive and centrifugal equipment is due to our dual-ability . . . first to design and then to build exactly the right blower for any specific job. If you have a job of moving air, gas, or liquids under moderate pressures, consult us without obligation.

ROOTS-CONNERSVILLE BLOWER CORP.
One of the Dresser Industries
511 Richland Ave., Connorsville, Indiana

Users get the same satisfactory performance from R-C blowers of 10 CFM capacity as is delivered by this 35,000 CFH inert gas generator.

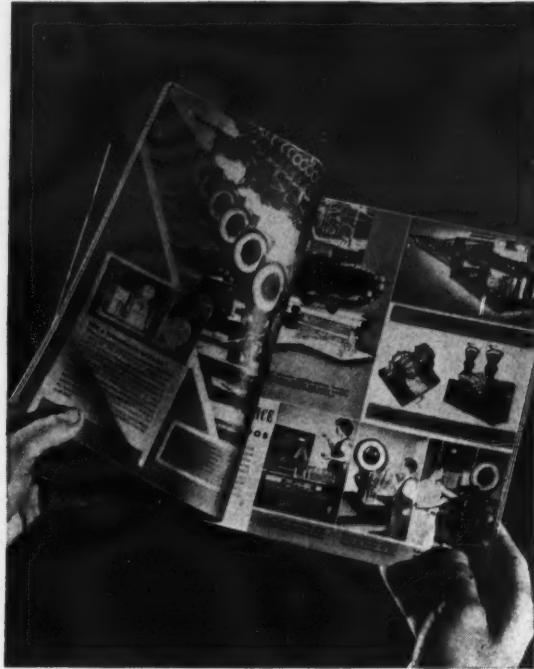


ROTARY POSITIVE AND CENTRIFUGAL BLOWERS • EXHAUSTERS • BOOSTERS
LIQUID AND VACUUM PUMPS • METERS • INERT GAS GENERATORS



When inquiring specify CP A3235 — see information request blank, pgs. 2-3

Page 75



LOOKING AHEAD!

OUT OF WAR-PRODUCTION experience have come new production and control ideas. Many of them are readily adaptable to peace-production problems.

A GREAT MANY of these new developments in the general fields of weighing, testing, force-measuring, balancing, counting and batch-control can be seen in their war-applications, in the new booklet "Background for Victory".

THIS IS NOT A POSTWAR CATALOG. It is an idea book for idea men looking for new ways to get better and faster results in these fields.

A COPY WILL BE SENT to any industrial executive, without charge, and without sales solicitation of any kind. Toledo Scale Company, Toledo 12, O.

TOLEDO
HEADQUARTERS FOR
SCALES

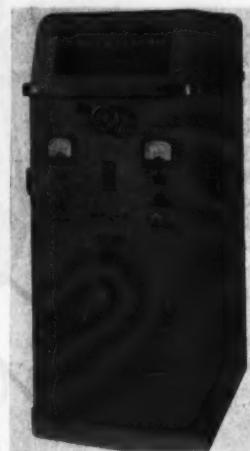
When inquiring specify CP A3236 — see information request blank, pgs. 2-3

Page 76

Equipment for Production

Compact Dielectric Heater Has Great Generating Power For Size

Compact design saves floor space in plastic molding plants requiring heavy-duty preheating



Dielectric Heater —
5 KW Output

fully calibrated dials are provided. Available accessories are foot control and continuous-belt heating oven. This "Heatmaster" unit is capable of heating 3.3 pounds of preform in one minute or a 5 lb. preform in 90 seconds. Output is 5 KW plus; input 8 KVA (approximate); line voltage 220 volt; 60 cycle 3 phase; frequency 30 mc.-15mc.-5 mc. optional. Heat input: permits heating of loads of widely varying characteristics with a minimum amount of adjustment. Size: 24" wide, 28" deep and 59" high. Weight is about 1000 lbs. Complete information concerning all these units on request.

RADIO RECEPTOR CO., INC. (Thermatron Div.), Dept. CP, 251 W. 19th St., New York 11, N. Y.

When inquiring specify CP A3237 — see information request blank, pgs. 2-3

Separator Units for Recovery of Water; Oils; Pollution Prevention

Neutralization of pickling liquor among most important applications; equipment requires only incidental attention

Uses — For the neutralizing of industrial acids such as nitric, sulphuric, chromic, etc. Also in connection with tool machines oil recovery systems; oil clarifying systems; conservation of quench oils; water conservation; pollution prevention systems; waste acid pollution prevention systems.

Features — Neutralization takes effect immediately. The residue is pumped from the system periodically and this residue has no detrimental effect, nor will it fill up the sewer pipes, streams, lakes or waterways. Many problems such as the recovery of water by clarification or separation of oils, grease and sediment. Makes possible the re-use of water for cooling and circulating purposes. Savings accrue, of course, where there is a scarcity of water.

Description — In the particular acid neutralizing applica-

tion referred to definitely here, the construction is of stainless steel. It will handle continuous flows or batch flows, the latter being allowed to collect in the large tank and to flow through the neutralization system at rates of 5 gpm up to 25 gpm. With this type of system initial cost is low and the neutralization takes effect in ample time for the next dumping. In some cases the system has been installed underneath the ground; in others on the roofs of plants. Also in some instances filters of other manufacturers have been utilized, as well as conveyor systems and drag line systems and pumps to recirculate the liquids back to the machines. In some cases the invested capital has been returned within six months, for not only was the equipment used to recover and conserve liquids but it has provided savings in labor, operating as it does on the gravitation principle, eliminating the need of employees watching the equipment and turning valves. Drawing shows a view with slab removed of neutralizer treatment system for industrial acid wastes handling pickling liquor and waste acids. Neutralized water flows from the system into sewers and waterways in de-acidized condition. Periodical labor required. A typical unit is to be seen in photo showing unloading operation. This was for installation in airplane motor plant. It is equipped with oil storage tanks, skimmer valves, try cocks, sight glasses, valves, ready to be installed in dry pits. Constructed of 5/16 inch steel plate. Another installation was in safety razor blade plant. Liquid used in grinding machines is kept constantly clean. System requires no manual attention, gravity doing the work of separation, removing grit, metal

INTERNATIONAL for Faster Production at Lower cost



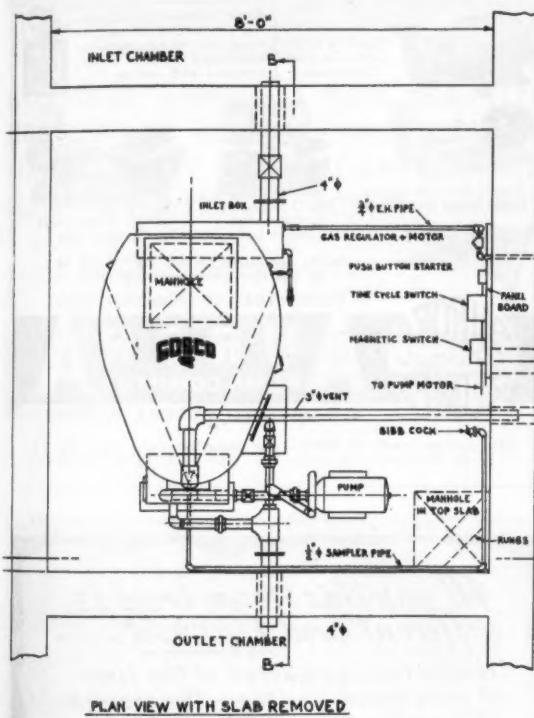
INTERNATIONAL ENGINEERING, INC.
DAYTON 1, OHIO

When inquiring specify CP A3238 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

PRODUCTION

particles from liquid. The adjustable oil skimmer or draw-off valve is the only movable part in the interceptor and separator. It is to be adjusted in the field or after the interceptor and separator has been filled with water and placed in operation for a week to give an opportunity for oil to accumulate at the top of the water in the separator. When it has been adjusted to suit the flow rate described it is left in position and not adjusted again unless larger quantities of oil are to be clarified in the affluent flowing through the system. Gate valve on oil outlet should be closed until there is a four-inch cuff of oil on top of the water in the interceptor and separator. The depth of oil



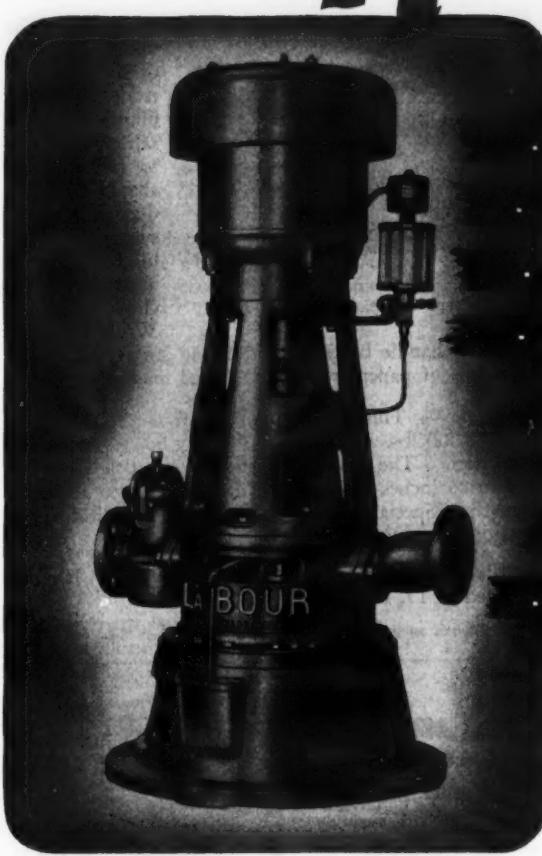
on top of the water can be seen through the double sight glass or it can be tested by opening a try cock. The normal flow level can be observed through the sight glass and the oil draw off valve set to draw off the oil into the oil box. Should the oil and water flowing through separator be at a constant even flow or should the oil contained in the water flowing into the separator be approximately of the same amount at all times the oil skimmer valve and oil outlet can be left open just enough to allow oil to flow out and not water. Should the oil contained in the influent vary the oil skimmer valve on the oil draw off outlet must be kept closed. The oil must be drawn off at regular intervals, otherwise the depth of oil would increase and occasional drops of oil flow out with the affluent. In cleaning out dirt and sediment at the bottom of outlet it is merely necessary to crack the gate valve and water will force the residue out of the unit. Flows of 10 GPM to 3000 GPM in standard sizes, larger flows clarified thru special designed systems. Additional information on Gale interceptors and separators on request.

GALE OIL SEPARATOR CO., Dept. CP, 52 Vanderbilt Ave., New York 7, New York.

When inquiring specify CP A3239 — see information request blank, pgs. 2-8

NOVEMBER-DECEMBER, 1945

Announcing LABOUR TYPE G



No Stuffing Box

No Mechanical Seal of any Kind

No Mechanical Contact at any Time

No Circulation of Air or Liquid Through the Seal

No Closed Impeller Needed

No Governors, Springs, etc.

No Mechanical Devices

No Close Clearances

Here is the answer to the constant annoyance, expense and hazards of pump packing and repacking. LaLabour Type G has no packing; there is no rubbing action or close clearance in the pump at any time, standing or running. Efficiency and dry vacuum set new high standards, even for LaLabour.

Bulletin 51, describing the Type G, is now ready. Ask for your copy, without cost or obligation to you.

THE LABOUR COMPANY, INC.
1571 Sterling Avenue, Elkhart, Indiana, U.S.A.



When inquiring specify CP A3240 . . . see information request blank, pgs. 2-3



The John Van Range Co.
*Specializing in
 Fabrication of*
**STAINLESS STEEL
 EQUIPMENT**
for the
**Chemical and Processing
 Industries**

Also manufacturers of Monel Metal, Aluminum, Copper, Zinc and Steel Equipment. Founded in 1847, our Experience should be invaluable to Manufacturing Chemists, Food, Dairy, Drug and Textile Processing Industries.

CONSULT US ON YOUR PROBLEMS

SEND US YOUR INQUIRIES

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

Division of The Edwards Manufacturing Co.
 302-342 CULVERT ST. CINCINNATI 2, OHIO

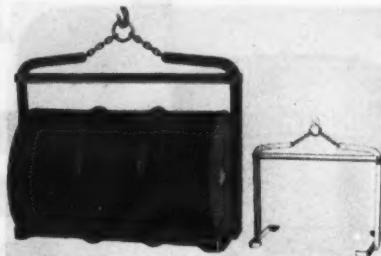
When inquiring specify CP A3241 — see information request blank, pgs. 2-3

Page 78

PRODUCTION

Cradle Handles Any Shaped Drum

Picks up barrels with straight, bilged sides, flat or chined ends



Toggle type cradle, capacity 1000 lbs.

designed to handle barrels or drums, it can serve in picking up rolls of paper or similarly rolled materials.

Description — This toggle type barrel cradle has a capacity of 1000 lbs. and is made of heavy bar stock, welded construction. The cradle illustrated handles units 20 inches to 25 inches in diameter and 32 inches to 36 inches in length. Special sizes are available. Additional information on request.

PALMER-SHILE CO., Dept. CP, 7128 West Jefferson Ave., Detroit 17, Mich.

When inquiring specify CP A3242 — see information request blank, pgs. 2-3

**Here's the *MULTICLONE*
 Story in a Nutshell...**

IT SAVES SPACE

for, in addition to the unit itself being far more compact, its shape can be adjusted to fit various space requirements... long and narrow, square or wide. You can often utilize waste areas too small for other equipment.

Unit	Width	Depth
Collector A	1.0	1.0
Collector B	2.5	1.5
Collector C	4.5	2.0
Collector D	6.5	2.0

IT RECOVERS THE "FINES"

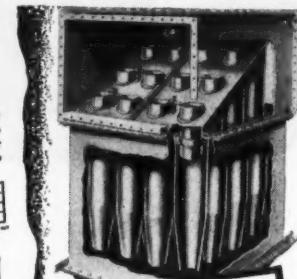
as well as the coarser particles. This results in high overall efficiency on any application!

IT IS UNUSUALLY ADAPTABLE

for, in addition to the shape adaptability, inlet-outlet connections are easily adaptable to meet special installation conditions!

IT IS SIMPLE

both to install and maintain, requires only single inlet and outlet ducts, and a single collecting hopper serves an entire bank of tubes!



**On any dust recovery job
 —large or small—
 the *MULTICLONE*
 has many advantages!**

Why limit your dust recovery job to one or two performance features? The many Multicloner advantages—only a few of which are outlined here—are the result of more than 38 years of specialization in the science of dust recovery.

GET ALL THE FACTS. Send for booklet describing the many Multicloner advantages. Also let our trained engineering staff study your problem and show how Multicloner's savings benefit you. No obligation.

**WESTERN
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ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR
 EXHAUSTION OR REHEATING MATERIALS FROM CHIMES & LOUDS
 Main Office: 1022 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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 PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

When inquiring specify CP A3243 — see information request blank, pgs. 2-3

**Mr. Engineer:
 Meet PUMPS by Aurora**

Pumps "by Aurora" are well worth knowing — efficient and lasting — sizes for practically all requirements. Built by exclusive makers of fine pumps who regard EVERY pumping job IMPORTANT. Pumps "by Aurora" deliver satisfaction.

Aurora Deep Well Turbines
 for all conditions—4" to 24"



Type AD Hor. Split Case,
 Two Stage Centrifugal

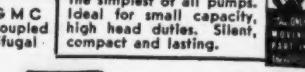


NSA Aurora
 Centrifugal
 Sump Pump

Type OD Hor. Split Case
 Single Stage Centrifugal



Type G M C
 Close-Coupled
 Centrifugal



APCO Turbine-Type Pumps
 The simplest of all pumps.
 Ideal for small capacity,
 high head duties. Silent,
 compact and lasting.



APCO Horizontal
 Condensation
 Return Unit



APCO Single Stage
 Turbine-Type

Write for CONDENSED CATALOG M
 or See Our Catalog in SWEETS.

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA
 PUMP COMPANY

62 Loucks Street, AURORA, ILLINOIS

When inquiring specify CP A3244 — see information request blank, pgs. 2-3

**"I'll say this Steam trap is
 different and Efficient..."**

**this orifice is adjusted at the time
 of installation and thereafter operates
 efficiently under widely varying volume
 of condensate and air, which, by the way
 are not permitted to accumulate but are
 discharged continuously.**

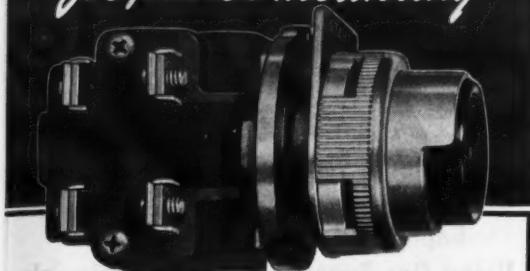
**It has floats, bellows, etc.,
 and is free from the shutdowns
 and repairs frequently traceable
 to such moving parts. Unusual,
 too, is the feature of checking
 draincock operation by
 merely glancing at the
 gauge glass.**

**But to get the
 whole interesting
 and enlightening
 story just write for
 Bulletin No. 903-B.
 THE COE MFG. CO.,
 3 Bank St., Paintsville, Ky.**

When inquiring specify CP A3245 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

NEW LINE OF **OIL-TIGHT** **PUSHBUTTONS** *for panel mounting*



**ACCESSIBLE TERMINALS! MORE COMPACT!
MOUNTING IN ANY POSITION! MINIMUM
STOCK FOR ANY COMBINATION! SEPARATE
BLOCKS AND OPERATORS! INTERCHANGEABLE!**

Write for Bulletin No. 202. Address Industrial Controller Division, 4041 North Richards Street, Milwaukee 12, Wisconsin.



SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

When inquiring specify CP A3246 — see information request blank, pgs. 2-3

a "first"
FOR GREATER
SAFETY

NEW CESCO HOOD RESISTS STRONGEST ACIDS

Now chemical workers get 100% Safety First with the new and improved Cesco Acid Hood. The most corrosive acids can't eat through the Acitex hood or window. It provides safety with comfort, too. The hood fits smoothly, easily over head and shoulders, ties at the waist. An air-feed unit, plus special side vents, gives wearers plenty of fresh air and splash-proof ventilation.

LOOK AT THESE TEST RESULTS!

Under tests, the tough Cesco Acitex shows these reactions to the 6 most powerful acids:

Nitric: NO EFFECT
Sulphuric: SLIGHT STAIN;
Hydrofluoric: NO EFFECT
Carbonic: (liquefied): SLIGHT DISTOR-
TION; NO DELETERIOUS EFFECT
Hydrochloric: NO EFFECT



Learn more about this Acid Hood now.

CHICAGO EYE SHIELD CO.
2338 WARREN BOULEVARD • CHICAGO 12, ILLINOIS

CESCO FOR SAFETY

When inquiring specify CP A3247 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

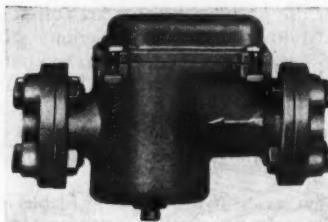
PRODUCTION

Perforated Metal Used Instead Of Wire Screen In Strainer Basket

Less liable to damage; quickly removed for cleaning

Uses — This low swing strainer is a recent addition to line and has been used during past period in protecting critical pumps in vital industries.

Features — Use of perforated metal, steel or bronze, instead of wire screen for the strainer basket; slotted lugs at top of plate line up with lugs of the strainer body to receive the four hold-



Strainer 100 gpm capacity

ing bolts, permitting quicker removal of basket for cleaning. Compact design permits mounting in small place or in lines along walls. Strainer is designed for flange mounting. Companion flanges are included as part of the unit.

Description — At present available in capacity of 100 gpm with 2 in., 2½ in. or 3 in. intake and discharge sizes. Maximum operating temperature is 600° F. Maximum pressure is 75 psi. Larger and smaller sizes will be available later.

BLACKMER PUMP CO., Dept. CP, 1840 Century Ave., Grand Rapids, Mich.

When inquiring specify CP A3248 — see information request blank, pgs. 2-3

Blueprint Layouts for New and Remodeled Wash Rooms

A new twelve page two color, illustrated booklet gives a wealth of practical information on planning new wash rooms and modernizing old ones. It contains numerous blueprint layout reproductions in which "Washfountains" and "Multi-stall" showers are installed. An important factor is the space saved by these units. It is estimated that they require 25% less space than other washing fixtures. Included in this booklet are scale model cut outs for those who wish to make their own wash room layouts.

BRADLEY WASHFOUNTAIN CO., Dept. CP, 22nd & Michigan Sts., Milwaukee 1, Wis.

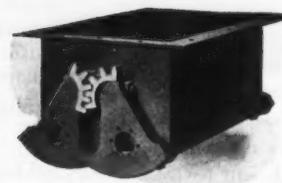
When inquiring specify CP A3249 — see information request blank, pgs. 2-3

HAND WINCH

Worm geared and self-locking to hold the load in any position, this winch is ideally used for lifting and lowering heavy door, pots, kettles, bins, chutes, etc. Ten sizes are standard, can usually be shipped promptly from stock.



GATES



Single undercut and double undercut types with rolled steel, cast iron or cast steel bodies and rolled steel bottom plates. Also chop gates, slide and roller gates. Dimensions of standard sizes, weights and prices furnished promptly.

BELT IDLERS

For belts 14 to 48 inches wide. The pulleys are sturdy, rugged, built with straight sides to shed dust and rounded corners to prevent injury to the belt. They are evenly balanced and run true insuring long life.

Furnished troughed or flat, in standard and many special designs.



THE C.O. BARTLETT & SNOW CO.

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DRYERS, COOLERS, CALCINERS AND KILNS

BOILER PLANT COAL AND ASH HANDLING SYSTEMS

CONVEYORS, CRUSHERS, FEEDERS, SCREENS

When inquiring specify CP A3250 — see information request blank, pgs. 2-3

how chemistry's war-born progress affects

YOU

Never before have such profound changes taken place in chemical industry — with so few details generally publicized — as in the war years just past.

New techniques, new materials, new equipment, whole new chemical industries have sprung into being. Much has happened which, for security reasons, could not be revealed until now.

Here is your opportunity to see and hear how peace-time applications of war-born changes may affect your plants, your markets, your profits. It's the 20th Exposition of Chemical Industries, which will be held at Grand Central Palace in New York City, February 25 — March 2, 1946.

What you will see at the exhibits, what you can learn there by talking with exhibitor's technical representatives, may shape your thought and actions for months to come.

For every chemist, chemical engineer, and production head throughout industry, this year's Exposition is — more than ever before — a "must". No executive responsible for the future of any business depending on chemical process, in his own or customers' plants, can afford to pass it up.

Attendance will pay you well. Be there with your associates!

**20TH EXPOSITION OF
CHEMICAL
INDUSTRIES**
FEB. 25 - MAR. 2
GRAND CENTRAL PALACE
NEW YORK CITY

Management of
International Exposition Co.

When inquiring specify CP A3251 — see information request blank, pgs. 2-8

Page 80

PRODUCTION

Power Brushes Speed Finishing of Small Diameter Surfaces

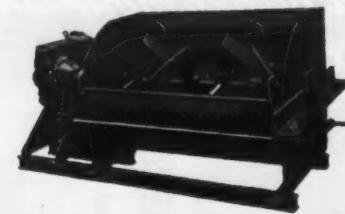
Easily inserted in holders; installed on bench motors, drill presses; used with portable tools; in complete kit in 12 sizes

Uses — These relatively small, versatile brushes are being used in such services as close tolerance operations; for removing insulation, rust, mold marks and for a large number of operations requiring deburring, cleaning or finishing small diameter inside surfaces.

Features — Utilizing a new principle of wire suspension under pressure and equipped with a variety of holding tools designed for use in drill presses, bench grinders and other special production and deburring tools and equipped with high grade crimped wire savings of man hours and production costs have been demonstrated in industrial applications during the past two years. The brush holders which are designed for use on these brushes are constantly increasing their adaptability which often permits stock brushes to be used in a way that enables them to contact definite surface areas regardless of shape. The "Situft" extractor — a pair of pliers, one end grooved with the other end cut to fit the "Situft" holder provides an extremely easy method for removing the brush from the holder.

Description — This new series of brushes is available in a variety of sizes: outside diameters ranging from $\frac{1}{4}$ " to $\frac{1}{4}$ "; bush face lengths from $\frac{1}{16}$ " to $\frac{5}{8}$ "; stem sizes to fit $\frac{1}{16}$ ", $\frac{3}{32}$ " and $\frac{1}{8}$ " chucks, overall length from $2\frac{1}{8}$ "

Heavy Duty Raw Material Mixers Built to Order



Capacities 5 to 60 Cubic Feet Using Our Special Multi Mix Principle

We have built mixers for many chemical, rubber and process plants and may be able to help you in your quest for heavy duty, inexpensive mixers.

Write Us.

The Multiplex Concrete Machinery Co.
Elmore, Ohio

When inquiring specify CP A3253 — see information request blank, pgs. 2-3



**WARM THOSE HARD-TO-HEAT SPOTS
WITH G-E
FORCED-
CONVECTION
HEATERS**

Use them to heat drafty corners, tool sheds, guard houses, and other hard-to-heat locations. Just connect them to the nearest outlet, snap the switch and direct the warm, clean air wherever it is needed. These handy electric heaters are available in portable and suspension models. Ratings, 2 to 15 kw. Highly efficient, unusually durable.

PRICES FROM \$46.00

SEND FOR GED-650

This catalog will give you the complete story on Calrod heaters and other G-E midget heaters; will help you select the midget heater best suited to your needs. *General Electric, Schenectady 5, N. Y.*

*OTHER G-E HEATERS: CONVECTION HEATERS • IMMERSION HEATERS
STRIP HEATERS • CARTRIDGE HEATERS • CALROD HEATERS • FIN CALROD HEATERS • HEATING CABLE



GENERAL  ELECTRIC

When inquiring specify CP A3254 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

PRODUCTION

to $2\frac{1}{4}$ " and the gauge of wire used from .003" to .005". The shipping weights range from 2 to $4\frac{1}{2}$ ounces. These "Situ" brushes are available in a kit containing 12 different sizes of brushes and two sizes of the special holders. Brushes and holders are held in place in a block according to size. One of the convenient holders fits into the standard $\frac{1}{4}$ " air chuck of portable tools. Perhaps the most versatile of the "Situ" is the model equipped with .005 wire, and mounted on motors varying in speed from 500 to 25,000 rpm. A few of the many applications include use by an aluminum manufacturer in removal of flaked metal from bolt holes. Four hours were formerly required



POWER BRUSHES & HOLDERS: for deburring, cleaning, etc., attach to bench motors, drill presses; easily extracted by special pliers

to handle 65 holes; complete operation now performed on 360 in same length of time. Others are removal of burrs from threaded holes in steel parts and of excess rubber in interior of flexible tubing. Also, in removal of heat scale and white lead composition in small gears and other deburring operations. In a cleaning operation on a porcelain electrode part, a $\frac{5}{8}$ " brush made of .010 nylon is employed.

Illustration — upper left hand view shows brushes mounted on multiple holder used on a bench motor; two inside diameters being brushed simultaneously; upper right — brush mounted on a portable tool fastened to bench motor brushes inside diameter of a guide; lower left — brush mounted without holder in drill press removes burrs; lower right — extractor pliers to remove brush from holder.

THE OSBORN MFG. CO., Dept. CP, 5401 Hamilton Ave., Cleveland, Ohio.

When inquiring specify CP A3255 — see information request blank, pgs. 2-3

Prefabricated Equipment — Piping; Pressure Vessels and Heat Exchangers

Three related groups of essential equipment are shown in complete detail in sixteen page catalog. These comprise prefabricated piping, pressure vessels and fabricated plate work and heat exchanger equipment — bare or fin tube. The bulletin points out that services on this equipment include thermal design, mechanical design and complete fabrication of a range of apparatus in each group. There are a number of products of each classification illustrated and diagrams and sectional views show features of heat exchangers and specifications of different types.

AMERICAN LOCOMOTIVE CO., Dept. CP, 30 Church St., New York 8, N. Y.

When inquiring specify CP A3256 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

Pump illustrated is single-stage, split-case centrifugal.

By FAIRBANKS-MORSE

Here's what that means to you. In addition to sustained high efficiency pumping equipment — with its operation designed to do your particular job — you get three major advantages from Fairbanks-Morse Complete Pumping Units.

1. **Combined Responsibility.** Designed and built in one factory, pump and driver (motor or engine) are perfectly matched and covered by a single guarantee.
2. **Successful UNIT Performance.** Tested in one plant under expert engineering supervision, pumps and drivers assure you superior operation.

3. **Service from ONE Source.** One engineer is familiar with the entire installation — no question as to who makes any adjustments or repairs.

You get these major advantages from Fairbanks-Morse . . . because only Fairbanks-Morse designs and builds all components of an outstanding line of complete pumping units.

To see a qualified engineer about any pumping job, write Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

Fairbanks-Morse

A name worth remembering



Diesel Locomotives • Diesel Engines
Scales • Motors • Pumps • Generators
Magnatos • Stokers • Railroad Motor
Cars and Standpipes • Farm Equipment

When inquiring specify CP A3257 . . . see information request blank, pgs. 2-3

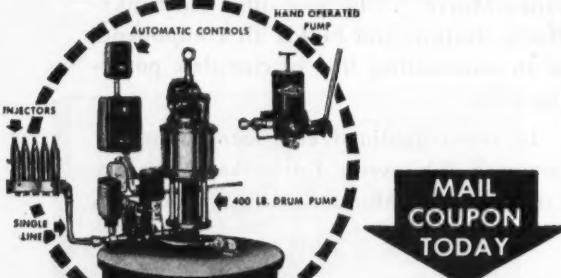
Check and you will find why **LINCOLN CENTRO-MATIC LUBRICATING SYSTEMS** are the **FIRST CHOICE**

TODAY, Lincoln Centro-Matic Lubricating Systems are being used on all types of coal mining machinery and equipment. They are outstanding systems and include many exclusive features. You, too, can save man hours, machine hours, power, bearings, and prevent accidents by installing Lincoln Centro-Matic Lubricating Systems. Check and you will find why Lincoln is the **FIRST CHOICE**.

- 1. Lincoln Centro-Matic Systems will dispense either oil or grease.
- 2. Will dispense a pre-determined, measured quantity of lubricant, unaffected by temperature or viscosity changes.
- 3. Lubricant is delivered through an injector to each bearing at maximum pressure regardless of location on the machine.
- 4. Injectors are easily adjusted for the desired output—no special tools needed.
- 5. Each injector is provided with an external indicator.
- 6. A complete range of lubricant pumping units adaptable to the bearing requirements of a single machine or a battery of machines. Pneumatically, electrically or manually operated.
- 7. Centralized or zoned systems, pumping lubricant from an original refinery container and supplying lubricant automatically at fixed time intervals.
- 8. All pumping units are of proven design and incorporate features that have been used

on Lincoln lubricant pumps that have served dependably in automotive, agricultural and industrial applications.

- 9. Systems can be installed so that lubrication can be effected by the operator either by operating a manual pump, opening a valve on a common lubricant line under pressure, or from a time-controlled central source.
- 10. Easy to install. Only one supply line is needed.
- 11. Any injector in a manifold can be removed for inspection without disturbing line connections or other injectors in the manifold.
- 12. Special Linpak packing eliminates metal-to-metal seals. This maintains accuracy and gives longer service life.
- 13. The facilities of Lincoln Engineering Company are devoted exclusively to the manufacture of lubricating equipment.
- 14. A staff of experienced lubrication engineers is ready to assist you in all lubrication problems.



LINCOLN

ENGINEERING COMPANY
5701 Natural Bridge Ave., St. Louis 20, Mo.

Gentlemen: Please send me complete bulletins on Lincoln Centro-Matic Lubricating Systems.

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TITLE _____

COMPANY _____

ADDRESS _____

CITY _____

MAIL
COUPON
TODAY

CP 8252IC

When inquiring specify CP A3258 — see information request blank, pgs. 2-3

Page 82

PRODUCTION

Fumigant Protects Stored Grain Against Insect Attack

Manufactured under rigid laboratory control; does not flash at normal or reasonably abnormal temperatures; easily applied



Grain in elevators protected by applying 1½-2½ gals. of fumigant to last 50 bushels in each 1000

Uses — Protection of stored grain from attack by insects which destroys its bulk, germination and milling qualities.

Features — Manufactured under rigid laboratory control. The formula itself is based on preliminary work and recommendations of the U. S. Department of Agriculture. Safe, easy to apply, economical.

Description — This effective, easily applied fumigant does not flash at normal or reasonably abnormal temperatures; does not present a fire or explosion hazard and will not harm the germination or milling quality of the grain. It leaves no poisonous residue on the grain. It is a special



NEW CATALOG
Illustrated in full color—showing all sizes and types of South Bend Lathes. Ask for Catalog No. 10-D.

South Bend Precision Turret Lathes are primarily designed for the fast, accurate machining of small parts. Yet, because of their versatility and wide range of spindle speeds, they are readily adaptable to various classes of work. They have the accuracy for exacting, close tolerance operations. They have power and rigidity for producing fine finish. Efficient on production of duplicate parts, they are especially practical for second operation work. Available with 1" collet capacity, 10" swing, and ½" collet capacity, 9" swing. Also South Bend Toolroom Lathes and Engine Lathes with 9", 10", 13", 14½", and 16" swing.



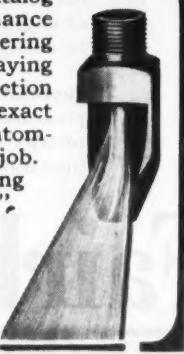
SOUTH BEND LATHE WORKS
Lathe Builders Since 1906
439 E. MADISON STREET SOUTH BEND 22, INDIANA

When inquiring specify CP A3260 — see information request blank, pgs. 2-3



HUNTING
FOR THE
Right
SPRAY
NOZZLES

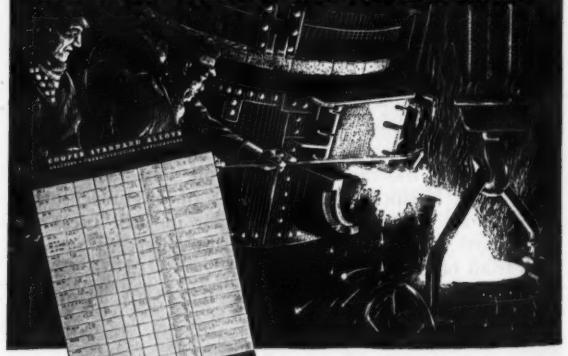
Send for Spraying Systems Catalog No. 22. Provides performance tables and hydraulic engineering data on thousands of Spraying Systems nozzles. Permits selection of the spray nozzle with the exact capacity, spray angle and atomization for your particular job. Shown is one type of Spraying Systems nozzle, the "flatjet," used where a sharp, hard-hitting spray is required. For complete information, write for your copy of Catalog 22 today.



SPRAYING SYSTEMS COMPANY
4037 West Lake Street • Chicago 24, Illinois
SPECIALISTS IN THE DESIGN AND
MANUFACTURE OF SPRAY NOZZLES

When inquiring specify CP A3259 — see information request blank, pgs. 2-3

GET THE FACTS ON THIS ALLOY CASTING SERVICE



Write for
**FREE
DATA
SHEET**

Condensed into one file-size reference sheet are complete data on the products and services of The Cooper Alloy Foundry Co. Included is a full listing of Cooper stainless steel, monel and nickel alloys... their analyses, physical properties, recommended applications, A.I.S.I., A.S.T.M. and other equivalent designations. Get the facts on Cooper... write for this data sheet today.

THE COOPER ALLOY FOUNDRY CO.
150 BLOY STREET • HILLSIDE, NEW JERSEY

When inquiring specify CP A3261 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

PRODUCTION

formulation giving off bisulphide and chlorinated hydro-carbon vapors. Breathing of concentrated vapors or prolonged or repeated breathing of its vapors is hazardous to humans. Methods of application — grain elevators — use a sprinkling can without a cap. Pour the fumigant directly on the grain stream, applying back and forth across the stream or through the spout discharging into the bin. Apply to last 50 bushels in each 1000. Carload treatment, — apply fumigant by means of sprinkling can without cap. Use two men working from each end of the car towards the door. Apply as rapidly as possible. In enclosed spaces use of gas mask approved by U. S. Bureau of Mines for organic vapors is stipulated. Fumigant is packaged in 55 gallon galvanized non-returnable steel drums holding 52½ gallons net (659 pounds, net weight, 713 pounds gross weight) and in non-returnable steel drums holding 5 gallons (63 pounds net weight, 71 pounds gross weight). Folder on "Penco" grain fumigant on request.

PENNSYLVANIA SALT MFG. CO., Dept. CP, 1000 Widener Bldg., Philadelphia 7, Pa.

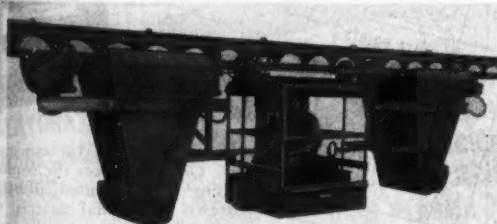
When inquiring specify CP A3262 — see information request blank, pgs. 2-3

Cab Operated Two Bucket Carrier

Swivel chair permits operator to work in direction of either bucket; single drum controller is at one side of cab; two foot brakes provided

Uses — This motor-driven cab operated double bucket carrier has been developed for the transportation of dry, bulk materials.

Features — The operation of the carrier and the closing and opening of the bucket gates are handled by the car operator who sits on swivel chair, enabling him to work in the direction of either bucket. A single variable speed drum controller is located on one side of the cab, but two foot brakes are provided, one at either end, so that one is always in convenient reach of the operator, regardless of which direction the cab is being directed. Push-pull levers for opening the bucket gates extend into the cab and per-



CARRIER WITH 2 — 25 Cu. Ft. BUCKETS

mit emptying the materials in any amounts and at any rate desired.

Description — The unit illustrated has two 25 cu. ft. buckets and is designed for carrying a total load of two tons. Other size carriers can be supplied. The buckets are designed and located with reference to the tramrail arch beam rail, so that they may be easily filled from overhead bins without interference or spillage. The carrier is provided with two motorized travel drives, one at each end and operates at speeds up to 600 feet per minute.

CLEVELAND CRANE & ENGINEERING CO., Dept. CP, Wickliffe, Ohio.

When inquiring specify CP A3263 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945



There are
257 Dodge factory graduate
Transmissioneers, located
in principal cities, to show
you new and better ways
of transmitting power.



Whenever you have a problem in power application, call a Transmissioneer — your local Dodge distributor. He has the latest answer. His knowledge and specialized experience are backed by a broad line of mechanical power transmission equipment — bearings, sheaves, pulleys, clutches and other drive components. Usually your immediate needs can be supplied from local stock.

DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

Sign of the Dodge
Transmissioneer



DODGE
MISHAWAKA

TRANSMISSIONEERED MEANS ADVANCED DESIGN
IN POWER DRIVES

When inquiring specify CP A3264 . . . see information request blank, pgs. 2-3

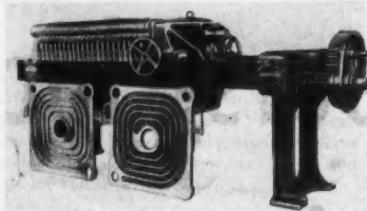
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Dodge Mfg. Corporation

CORRECT ANSWERS

FOR MANY
FILTRATION
PROBLEMS

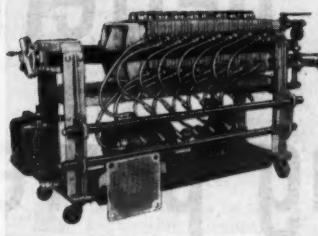
RECOVERING SOLIDS
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CONTINUOUS THICKENING — Plates and frames with spiral channels for thickening, washing, extracting, leaching, etc. Faster than use of settling tanks.



FILTRATION & WASHING — Side feed, open delivery Filter Press with rubber covered cast iron plates and frames.

HIGH TEMPERATURE FILTRATION — Portable stainless steel, pumping, filtering and extracting unit with hollow filter plates for steam circulation.



The range and combinations of process operations of Shriver Filter Presses indicate their versatility and economic advantages for your plant. This new guide to better filtration is yours for the asking. Write today.

T. SHRIVER & CO., Inc.
846 Hamilton Street
HARRISON, N. J.



SHRIVER FILTER PRESSES

When inquiring specify CP A3265 — see information request blank, pgs. 2-3

Page 84

PRODUCTION

Vibration Mount for Small Units

For dead weight loads as low as one pound



Light-duty vibration mount

distribution of weight; i.e. the amount carried by each support. Table in specification bulletin (available on request) has handy chart from which to make selection.

Description — The machine to be isolated is fastened to the mount by stud into tapped hole. The mount is fastened to its support by bolt or screw through holes provided (see photo). Light duty mount illustrated is offered in sizes and capacities for requirements ranging from one to two hundred pounds. This organization also offers heavy duty mounts for proper dead weight from 225-3800 pounds; also a "V" type for top heavy machines only in the same range. Copy of the illustrated specification bulletin on "Rexon" mounts referred to is available on request.

HAMILTON KENT MFG. CO., Dept. CP, Kent, Ohio.

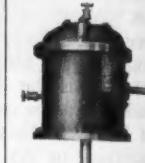
When inquiring specify CP A3266 — see information request blank, pgs. 2-3

Uses — To eliminate vibration and noise in small motors, power tools; in isolating instruments, tables, benches from external vibration.

Features — Easy to determine requirements and install. All information needed is total weight of unit to be isolated; distribution of weight; i.e. the amount carried by each support. Table in specification bulletin (available on request) has handy chart from which to make selection.

Description — The machine to be isolated is fastened to the mount by stud into tapped hole. The mount is fastened to its support by bolt or screw through holes provided (see photo). Light duty mount illustrated is offered in sizes and capacities for requirements ranging from one to two hundred pounds. This organization also offers heavy duty mounts for proper dead weight from 225-3800 pounds; also a "V" type for top heavy machines only in the same range. Copy of the illustrated specification bulletin on "Rexon" mounts referred to is available on request.

NETTCO Agitating Equipment



Nettco Model WT Agitator Drive Unit, completely enclosed.

"SPLASH LUBRICATION"

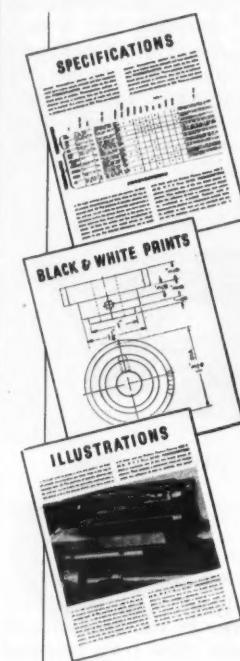
NETTCO Agitator Drive Type WT with splash lubrication is as smooth running as a well-oiled mouse. Fully enclosed in a leakproof housing, this drive works in a complete oil bath . . . overall efficiency is high, gears and bearings have long, trouble-free life. Unique design of housing with built-in oil trap eliminates stuffing box on vertical shaft and prevents oil leaks. NETTCO can supply specialized mixers to meet the needs of every industry.

Let us know your requirements.

NEW ENGLAND TANK & TOWER CO.
93 Tileston Street, Everett 49, Massachusetts

When inquiring specify CP A3268 — see information request blank, pgs. 2-3

Duplicate Almost Anything With This New Bruning Photographic Printer



With this Bruning Model 2 BW and Copyflex Continuous Printer there is practically no limit to the kind of materials you can duplicate! Quickly makes the copies of anything typed, printed, illustrated or drawn — original material with copy on both sides can be reproduced from one or both sides. Copyflex photographic prints are developed with three trays and a simple drier (readily available) — BW Prints are developed with the Model 153-M Developing Machine combined in convenient stand with the printing unit. Moderate in price. For complete information, write Charles Bruning Company, Inc., 4706-18 Montrose Avenue, Chicago 41, Illinois.

BRUNING SINCE 1897

The Key to Boiler Room Efficiency
SCHAUB SYSTEMS

When inquiring specify CP A3267 — see information request blank, pgs. 2-3

When inquiring specify CP A3269 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



• Only 16 lbs. of Multiwall Paper Bags are needed to carry a full ton of materials. Those figures indicate something of the strength of Multiwalls . . . an important reason why these bags are so efficient and economical.

To find out how Multiwall Bags and bag-filling equipment can be applied to your business, call your nearest St. Regis office today.



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NEW YORK 17: 238 Park Ave.
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When inquiring specify CP A3270 — see information request blank, pgs. 2-3

IMPROVE YOUR VACUUM PROCESSES

BEACH-RUSS TYPE RP. HIGH VACUUM PUMPS

DISTILLATION
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REFINING
FILLING
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for
MAGNESIUM
CHEMICALS
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In Beach-Russ Pumps, it's the slow speed, direct, positive, rotary, vibrationless motion, effective oil sealing and unique method of exhaust that provide the means for dependable evacuation of your equipment and prevent air inleakage. This means high vacuum — as much as 10 microns — and high volumetric efficiency, as well as lower cost operation on your wet or dry processes. Learn how and why. Write for Catalog No. 80.

BEACH - RUSS COMPANY
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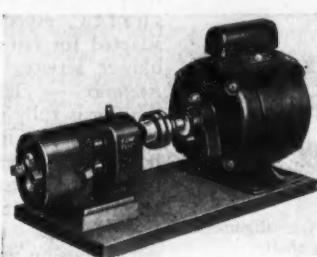
When inquiring specify CP A3271 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1945

PRODUCTION

Pump Handles Water to 500 Lbs. Pressure and Oils to 1000 Lbs.

Impellers changed for capacities of from 60 to 480 gph



Pump capacity 60-480 gph

Uses — Adaptable for handling thin liquids or water up to 500 pounds pressure and viscous liquids and oils to 1000 pounds pressure.

Features — Designed so that impellers can be changed to handle any capacity from 60 gallons per hour up to 480 gallons per hour. Flow is constant regardless of pressure and pump operates on vacuums as high as 27 inches.

Description — This pump is furnished in standard foot mounted models as illustrated, to be driven directly by standard speed motor, 1200-1800 rpm, and can be furnished for either side intake and discharge or intake and discharge on the face plate. It is made with mechanical seal, but can be furnished with the conventional type packing. Standard models have standard bronze sleeve bearings, or ball bearings throughout — or ball bearings and by-pass with pressure relief valves. The pump can be mounted in any position, as the bearings will support either vertical or horizontal mountings. It is made of suitable metals — cast iron, bronze, stainless steel, etc. BUMP PUMP CO., Dept. CP, La Crosse, Wis.

When inquiring specify CP A3272
— see information request blank, pgs. 2-3

Electronic Heating Units

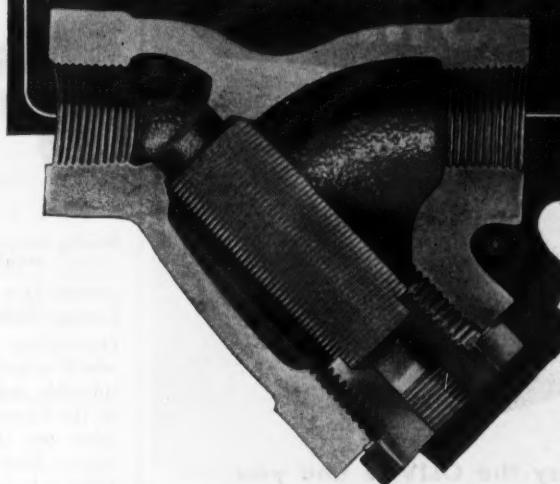
A sixteen page booklet presents a concise review of the development of electronic heating, principles of operation; describes the two chief methods and fields of application and lists many proved present day uses. A generous use of illustrations adds much interest to discussion of important points. Various types of high frequency generators are illustrated and described. Copies of "The A, B, C, of Electronic Heating" on request.

SCIENTIFIC ELEC. CO., Dept. CP, 107 Monroe St., Garfield, N. J.

When inquiring specify CP A3273
— see information request blank, pgs. 2-3

It says

**"STOP" to Solids—
"GO" to Fluids**



A BETTER Strainer to "police your pipelines"

• **FIRST**—The Screen, a high-grade woven Monel wire basket that catches solids—lets condensate, oil or other fluids flow freely.

• **SECOND**—Finish. Cadmium plated inside and out for protection against corrosion.

• **THIRD**—Easily Cleaned. Blow-off bushing made for easy removal. Bushing and Screen come out together. Screen automatically aligns on reassembly.

• **THOUSANDS IN SERVICE**—Sold by over 100 Mill Supply Houses.

6 sizes from $1/2"$ to $2"$ for pressures up to 600 lb. Reasonably priced. See your supply house or write for Bulletin S-200.

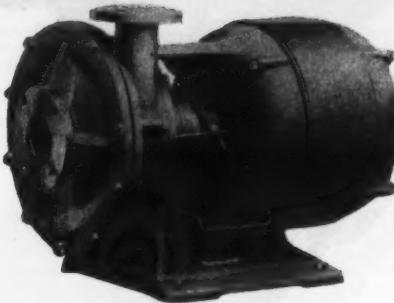
YARNALL-WARING COMPANY
125 Mermaid Ave. PHILADELPHIA 18, PA.



YARWAY STRAINERS

When inquiring specify CP A3274 — see information request blank, pgs. 2-3

OLIVITE ACID-HANDLING PUMP



- ★ Buy the OLIVITE and you buy durability
- ★ Buy the OLIVITE and you buy efficiency

Many acid handling centrifugal pumps are efficient . . . so long as they last. The trouble is they're short on durability.

Not so the Olivite Pump. It's long on both durability and efficiency. All contact parts are protected by "Olivite" or "Olivex", either of which is extremely resistant to practically all acids and many chemicals, hot as well as cold.

Cover casing and impeller are strong and non-brittle. The shaft is fully protected from corrosion and the floating stuffing box with spring tension gland makes the packing do its work properly.

Perhaps the best proof of the value of the Olivite Acid-Handling Pump can be found in the many repeat orders. Several large plants are operating more than 100 Olivites.

If you are handling acids or other chemical solutions in your plant, you should look into the merits of the Olivite Pump. As a starter send for Bulletin 308 and at the same time describe your problem.

OLIVER UNITED FILTERS INC.

New York 18, N. Y.
33 West 42nd Street



Chicago 1, Illinois
221 N. LaSalle Street

Western Sales Division
Oakland 1, California
2900 Glascott Street

Canada: Sales & Manufacturing Representative
E. Lang Limited — Orillia, Canada
Factories: Oakland, Calif. — Hazleton, Pa. — Orillia, Canada — Melbourne, Australia
11-OUF-2

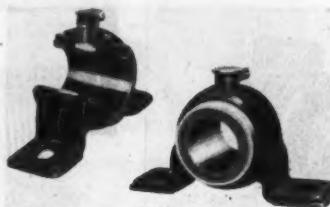
When inquiring specify CP A3275 — see information request blank, pgs. 2-3

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PRODUCTION

Bronze Bushed Bearing Improves Blower Volumetric Efficiency

Bearing for small shafts especially adapted for fan and blower service



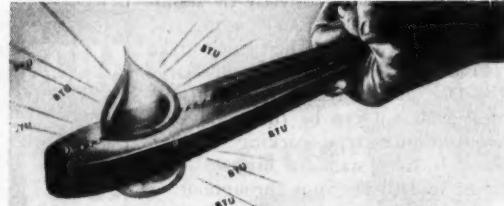
Bearing design provides free alignment, avoids cramping shaft

permits free self-alignment and avoids cramping the shaft. Unique formed steel base provides strength and rigidity.

Description — The bearing is compact. The frontal area which measures the obstruction to air flow has been considerably reduced, resulting in greater volumetric efficiency of the blower. A bronze capillary bushing which carries about one third of its volume of lubricant is used as a liner. This bushing is provided with a shoulder which offers a broad, flat bronze bearing surface which is always lubricated and serves to reduce friction between the bearing and the collar which positions the shaft. The pro-

Uses — For small shafts, especially adapted for fan and blower service.

Features — This bearing is fully self-aligning. The inner housing is spherical to conform to a spherical socket in the formed steel outer housing which



SQUEEZE MOST HEAT FROM EVERY DROP OF FUEL

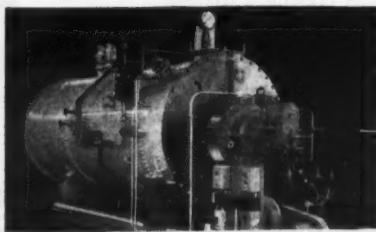
The four complete passes of combustion gas travel through the entire tube length of the boiler enables the boiler to absorb the greatest practicable amount of heat from the fuel burned.

The remarkable flat thermal efficiency, at low or high steam demands, of more than 80% of a Cleaver-Brooks steam generator is accomplished by the original and exclusive Cleaver-Brooks four-pass, down-draft construction of the boiler.

CLEAVER-BROOKS COMPANY

5124 No. 33rd St.

MILWAUKEE 9, WIS.



WRITE
ON YOUR BUSINESS LETTER-HEAD for the Free Steam Cost-Calculator — a ready-reference slide rule showing the comparative steam costs when using oil or coal as fuel.

Cleaver-Brooks STEAM GENERATORS

When inquiring specify CP A3276 — see information request blank, pgs. 2-3

SW STRUTHERS WELLS

Kneading Machines

MANY STANDARD OR
SPECIALY DEVELOPED
MODELS TO MEET
Specific Requirements

16 page descriptive
technical bulletin
on request

STRUETHERS WELLS CORPORATION
TITUSVILLE, PENNA.
PLANTS AT TITUSVILLE AND WARREN, PA.
Offices in Principal Cities

When inquiring specify CP A3277 — see information request blank, pgs. 2-3

Designed to Fit Your Particular Operating Conditions



When demands for air and gas volume are variable, yet *constant pressure* is imperative, choose a centrifugal type

BILLMYRE TURBO BLOWER

If your air or gas pressure conditions are changeable, but you must maintain *constant volume*, you need a positive displacement

POTTSTOWN ROTARY BLOWER

To be sure of economical operation, low upkeep expense, long service, investigate either of the two types of Allen Billmyre Blowers. Since we make both types, our recommendations are impartial. Write for full information.

ALLEN BILLMYRE COMPANY

445 Fayette Avenue

Mamaroneck, N. Y.

ALLEN BILLMYRE
BLOWERS AND EXHAUSTERS

When inquiring specify CP A3278 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



DURAMETALLIC HANDY-PACK

★ HERE IS A CONVENIENTLY PACKAGED general-purpose packing that will come in very handy for meeting many sealing conditions in and around your plant. Designed for pump and valve stuffing box conditions on temperatures up to 450° F.

RECOMMENDED USES:

SATURATED STEAM	WATER, Hot or Cold
REFINERY FLUIDS, such as crude oil, fuel oil, gasoline, and the like.	DILUTE ACIDS
BRINE	DILUTE CAUSTIC
LUBRICATING OIL	AMMONIA & ALKALIES
ILLUMINATING GAS	

DESCRIPTION:

HANDY-PACK consists of two outstanding types of Durametallic spiral packing . . . ready to cut into the desired number of rings for packing stuffing boxes.

(1) DURAMETALLIC — A twisted, flexible, lubricated metallic packing (lead foil wrapped) to be used as end rings and on each side of lantern gland.

(2) DURA-PLASTIC — A resilient, lubricated, semi-metallic packing to be used between the DURAMETALLIC packing rings.

WRITE FOR BULLETIN NUMBER 156P
COVERING HANDY-PACK SIZES AND PRICES

DURAMETALLIC  CORPORATION
KALAMAZOO MICHIGAN

When inquiring specify CP A3279 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

PRODUCTION

vision for lubrication is simple and adequate. A liberal oil reservoir with a close fitting wick surrounds the bronze capillary bushing and supplies the required amount of oil as needed. Wick and oil cup are supplied with the bearing. The formed steel base is sprung slightly when hold down bolts are tightened which insures proper pressure between inner and outer housing. This permits free self-alignment while maintaining the inner housing in its correct position. The feet of the base are flat and will not collapse under heaviest pull exerted by the hold-down bolts. Sound isolation can be provided by using Neoprene oil resistant grommets which are available at small additional cost. Complete information on Type "F" Bronzoil bearing on request.

DODGE MFG. CORP., Dept. CP, Mishawaka, Ind.

When inquiring specify CP A3280 — see information request blank, pgs. 2-3

Resilient Waterproof Coating for Tanks, Piping, Pits, Walls

Easily applied to inside or outside surfaces of wood, metal, stucco; used on surfaces continually submerged in water

Uses — As a waterproofing coating for roofs, walls and various types of structural surfaces of numerous materials. Applied with brush or trowel. May be used on cellars, pits, parapets, bulkheads, foundations, sump pits, structural steel work.

Features — This coating has about eight times the protective thickness of paint and is resilient and elastic. Unaffected by acid fumes.

Description — This coating known as "Liquinoleum" is a colloidal coating. In order to meet various specific conditions it is made in various consistencies. These include grades for general preservation purposes; for roofing and waterproofing; for boiler and heater coating and insulating; for surfaces continually submerged in water. Colors — red, green, gray, black. It is ready to use as shipped. It can be thickened by exposure to air to a caulking compound or putty consistency for use in filling cracks, breaks, or seams. Bulletin sent on request.

CONTINENTAL ASBESTOS & REFINING CORP.,
Dept. CP, One Madison Ave., New York 10, N. Y.

When inquiring specify CP A3281 — see information request blank, pgs. 2-3

High Frequency Converter For Induction Heating

For ferrous and non ferrous metals; brazing, soldering, annealing, etc.

Uses — These precision-built high frequency converters (available in 15 and 30 K.W. capacities) accommodate most requirements for brazing, soldering, hardening, annealing, melting, normalizing.

Features — Units embody rugged, powerful, over-capacity equipment.

Description — Units are housed in handsome, streamlined case. Bulletin illustrating and describing this equipment and giving interesting case histories on request.

AMERICAN TYPE FOUNDERS, INC., Dept. CP, 3906
Hudson Blvd., Union City, N. J.

When inquiring specify CP A3282 — see information request blank, pgs. 2-3

*Remove Packings
this
EASIER way*



Use DURA HOOKS

**Sturdy ALL STEEL
Packing Pullers**

HERE is a time saving device for removing old packing from stuffing boxes that will improve your manpower efficiency. DURA HOOKS are rugged, flexible hand-tools that can be used in "hard-to-get-at" places. For best results use two hooks as shown in illustration. Order your requirements today . . .

DURA HOOKS — HANDY SETS

Set No.	Description	Price
Set AA	Consists of 3 pairs of hooks, 7 1/2", 11" & 15" in length. For use in packing spaces 1/4" to 1/2" incl.	\$ 8.00
Set BB	Consists of 4 pairs of hooks, 7 1/2", 11", 15" & 19" in length. For use in packing spaces 1/4" to 5/8" incl.	13.60
Set CC	Consists of 5 pairs of hooks, 7 1/2", 11", 15", 19" & 22" in length. For use in packing spaces 1/4" to 1" incl.	20.00
Set DD	Consists of 6 pairs of hooks, 7 1/2", 11", 15", 19", 22" & 30" in length. For use in packing spaces 1/4" to all over 1 inch.	29.60

ABOVE PRICES U.S. ONLY . . . ASK YOUR JOBBER OR ORDER DIRECT FROM FACTORY . . . BE SURE TO INCLUDE YOUR PRIORITY

DURAMETALLIC  CORPORATION
KALAMAZOO MICHIGAN

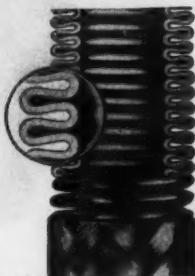
When inquiring specify CP A3283 — see information request blank, pgs. 2-3

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No Seepage...

WITH REX-WELD ON THE JOB!

REX-WELD Flexible Metal Hose is absolutely tight for conveying steam, gases, oils and various types of searching fluids. It eliminates dangerous, wasteful leakage—types are available which effectively resist the corrosive action of the material being conducted. To do a better job, more economically—use Rex-Weld!



- Available in bronze and steel, annular or helical corrugations.
- Unbraided or braided—depending on working conditions.
- Sizes from 3/16" to 4" I.D. (incl.)
- Successfully withstands temperatures to 1000° F. and burst pressures to 11,000 p.s.i.—depending on size.
- REX-TITE mechanical couplings are easy to install—reattachable.

Find out how durable, versatile REX-WELD can solve your flexible metal hose problems. Write today for Booklet E-144.

Flexible Metal Hose for Every Industrial Use

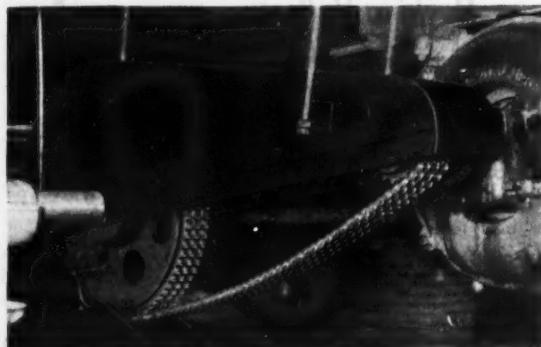
CHICAGO METAL HOSE CORPORATION
MAYWOOD, ILLINOIS

Plants: Maywood and Elgin, Ill.

When inquiring specify CP A3284 — see information request blank, pgs. 2-3

RELIABLE DRIVES

Save Maintenance — Cut Delays



Diamond Roller Chain drive with motor in low space, beneath floor. Compactness and dependability are two factors which make this installation, in a fairly inaccessible place, practical.

DIAMOND Roller Chain Drives are selected by the experienced industrial engineers. They will serve you well on all types of power drives—at low or high speeds and for capacities up to 2500 H.P.

Tell us your drive requirements and we will recommend the proper Diamond Chain to do the job. DIAMOND CHAIN & MFG. CO., 411 Kentucky Avenue, Indianapolis 7, Indiana. Offices and Distributors in All Principal Cities.

DIAMOND ROLLER CHAINS

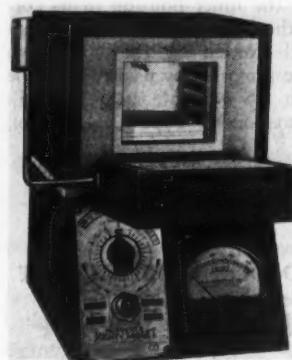
When inquiring specify CP A3285 — see information request blank, pgs. 2-3

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PRODUCTION

Midget Furnace has Built-in Precision Automatic Control

Compact unit for laboratory; small production use features low operating costs



Furnace — range: 200-1750° F.

meter. Low Operating costs. No addition of controllers, wiring, panels, necessary.

Description — Diminutive size: ID — 3" x 3" x 3"; OD — 8 1/2" x 10 1/2" x 8 1/2". Operates on 110 AC with current consumption of 500 watts.

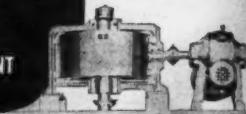
K. H. HUPPERT CO., Dept. CP, 6830 Cottage Grove Ave., Chicago, Ill.

When inquiring specify CP A3286 — see information request blank, pgs. 2-3

Uses — This very small electric furnace is equipped with built-in automatic control that maintains any desired temperature in range: 200-1750° F. for applications in laboratory work and precision production of small units.

Features — Accuracy comparable to large, high capacity units; all-steel construction; multi-insulation; special high temperature alloy elements; indicator light and indicating pyrometer.

LEE corrosion-resistant equipment is famous for its wide variety of standardized shapes and sizes, immunity to food acids, brilliant — smooth easy-to-clean surfaces, economy, efficiency, safety, extraordinary toughness and strength — equipment that will do your job better and faster.



LEE

BUILDS QUALITY
PROCESSING EQUIPMENT



**LEE METAL PRODUCTS
COMPANY, INC.**

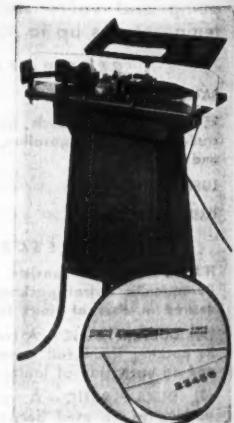
418 PINE STREET - PHILIPSBURG - PENNA.

When inquiring specify CP A3288 — see information request blank, pgs. 2-3

CODE DATE 100000 OR MORE CARTONS PER DAY

The Markomatic Way!

THE MARKOMATIC CODE DATER automatically marks flat folding cartons, paper or foil, envelopes, labels, bags. Capacities up to 18,000 units per hour for code dating; control and lot numbering; inserting colors, parts numbers, flavors, and sizes. Various sizes may be handled by one machine. Type or reading changes are easily made. Machine is heavily constructed and guaranteed.



Have you a marking problem?

Consult us — No obligation.

MARKING EQUIPMENT

ADOLPH GOTTSCHO, INC., 195 DUANE ST., NEW YORK 13, N.Y.

When inquiring specify CP A3289 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

**Which WAY
DO YOU HANDLE
DRUMS, BARRELS?**

SABIN
One-Man
TRUCK One Man OR 2 or 3 Men

SAVE LABOR! SAVE TIME! With a Sabin Type "L-3" Truck one man can load and transfer up to 800 pound drum or barrel loads — quickly, easily, safely. Exclusive Third-Wheel Feature has real advantages. Write for new Free Bulletin No. 45.

PRICE: \$33.50, with semi-steel roller bearing wheels.

The Sabin Machine Co., 6536 Carnegie Ave., Cleveland 3, Ohio

When inquiring specify CP A3290 — see information request blank, pgs. 2-3

**CLIPPER
MADE THIS CUT
IN 5 SECONDS**

Clipper Masonry Saws provide fast, economical cutting of special sizes and shapes of Clay, Concrete, Magnesite, Sillimanite, Acid Resistant Brick and other refractories.

Precision cuts easily made assuring tighter joints and longer lasting walls and arches in furnaces, boilers and acid chambers. Greater salvage of materials made possible through use of this equipment.

FREE TRIAL IN YOUR PLANT.
Complete information sent on request.

**CLIPPER MANUFACTURING CO.,
4034 Manchester, St. Louis 10, Mo.**

**Write for
DESCRIPTIVE
LITERATURE**

When inquiring specify CP A3291 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

PRODUCTION

Low Clearance Dollies With Steel Rollers for Loads of 10-12 Tons

*Loads only 6 inches from floor;
steel cleats imbed into wood skids*

Uses — For shifting machines, tanks, boxes, steel blocks, dies, furnaces, heavy objects, etc. comprising loads up to 12 tons.

Features — Sturdy steel cleats imbed into the wood skids and carry the load only a few inches from the floor with great safety and ease. Load is easily rolled by manual power over all types of hard floors or pavement. Also rolled diagonally across railroad tracks, plus acting as a turntable if desired.

Description — Obtainable in pairs, these "Skid-Rols" are simple, low-cost dollies, especially suitable for handling loads 10-12 tons. Each dolly is 18" x 10½" x 4" high. Equipped with four all-steel rollers 3¾" in diameter. Roller bearings are lubricated by means of "Zerk" fittings. If inverted, "Skid-Rols" can be used for a standing dolly for moving



Small, sturdy dollies handle loads from
10 to 12 tons

steel beams, girders and similar objects. Jacking the machine or load to be moved approximately 6 inches off the floor, the pair of dollies are positioned parallel with each other. The center of gravity of the load is located centrally over the "Skid-Rols." Jacks are removed and load will then rest, properly balanced on dollies. Complete information concerning these units is available upon request.

TECHTMANN INDUSTRIES, INC.,
Dept. CP, 828 North Broadway, Milwaukee 2, Wisconsin.

When inquiring specify CP A3292
— see information request blank, pgs. 2-3

Package Tying Machines

A wide selection of package tying machines that will offer a choice to meet most any requirement are shown in an attractive two color folder. Any worker can operate it and the various units will tie packages of any shape. Tyers are available with a bundle capacity ranging from 5 inches to 15 inches in height; length and width of packages do not matter. Copy of folder on request.

NATIONAL BUNDLE TYER CO., Dept. CP, Blissfield, Mich.

When inquiring specify CP A3293
— see information request blank, pgs. 2-3

NOW!
LITHIUM HYDRIDE
CALCIUM HYDRIDE
LITHIUM-CALCIUM HYDRIDE
AVAILABLE!

Large Commercial Quantities

High Commercial Purity

Many Particle Size Ranges

Other LITHALOYS Products

Lithium Metal

Lithium Amide

Lithium Alloys

Lithium Alcoholates

Lithium Peroxide

Lithium Alkyls

Lithium Nitride

Lithium Aryls

11-LC-7

LITHALOYS CORPORATION

444 MADISON AVENUE, NEW YORK 22, N. Y.

When inquiring specify CP A3294 — see information request blank, pgs. 2-3

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MODERN TUBE-CLEANERS
FOR THE PROBLEMS
OF TODAY.

THOMAS C. WILSON Inc.
21-11 44th AVENUE, LONG ISLAND CITY 1, NEW YORK

TW-102

When inquiring specify CP A3295 — see information request blank, pgs. 2-3

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PRODUCTION

Vinyl Butyral Cloth Coating Flexible at Zero and Below

Overcomes former handicap of vinyl resins in becoming stiff at low temperatures

Uses — Developed especially for Army ponchos to meet low temperature specifications.

Features — Use of Vinyl resins for Army ponchos and other waterproof apparel has been handicapped by the fact that they became stiff at low temperatures in comparison to rubber. This new compound, the first to go into commercial use on Army ponchos combines the advantages of vinyl materials with full flexibility, comparable to rubber at 0° F. and colder.

Description — Although rubber retains its flexibility at low temperatures, the vinyl resins have important other advantages. The material has been approved for use by coaters in making Army ponchos and similar gear.

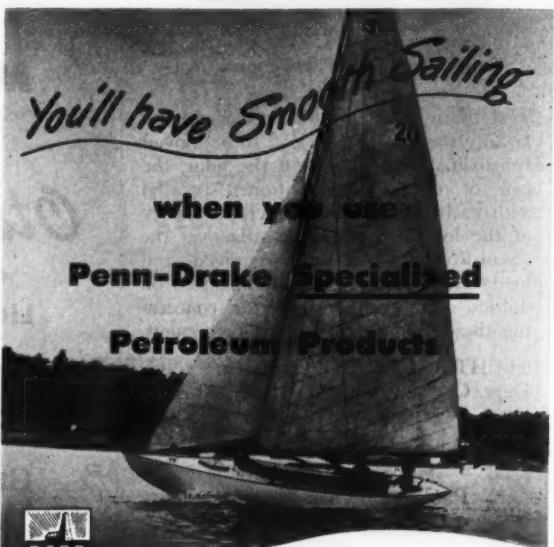
MONSANTO CHEMICAL CO., Dept. CP, St. Louis 4, Missouri.

When inquiring specify CP A3296 — see information request blank, pgs. 2-3

Driproof Vertical AC Motor

Rotor with bars, fans, end rings cast in one operation from aluminum alloys

Uses — This is an addition to line of protected type AC motors and for requirements where the services of vertical drip-proof motors rated at 40 C rise continuous duty —



MEET YOUR RIGID REQUIREMENTS

Penn-Drake specializes in producing white oils, petrolatums and other petroleum products of slightly different properties than ordinary-run. If regular-run products do not give you the results you want, let us help you work out a solution.

PENNSYLVANIA REFINING COMPANY
General Offices: BUTLER, PENNSYLVANIA
Refineries at KARLIS CITY and TITONVILLE, PA.

When inquiring specify CP A3297 — see information request blank, pgs. 2-3

PROTECTOSEAL

PROTECTS!
SEALS!
SAFEGUARDS!

AGAINST FIRE
OR EXPLOSION
AGAINST LOSS
BY EVAPORATION

HANDLING,
STORING,
AND DISPENSING

**FLAMMABLE
LIQUIDS**

FILL AND VENT FITTINGS

Fire-safe baffle tube extends to bottom of tank for rodding. Built-in gravity-operated automatic relief valves for pressure and vacuum. Eliminate waste and reduce fire hazard with Protectoseals. Approved by Underwriters' Laboratories.

THE PROTECTOSEAL COMPANY
1932 S. WESTERN AVE., CHICAGO 8, ILL.

PROTECTOSEAL

When inquiring specify CP A3298 — see information request blank, pgs. 2-3



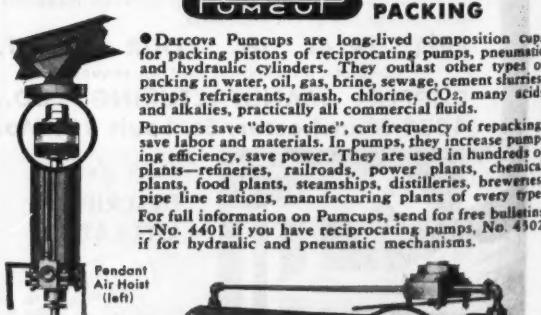
EVERY RECIPROCATING PUMP..
EVERY HYDRAULIC CYLINDER..
EVERY AIR CYLINDER..

works better with

PUMCUP PACKING

• Darcova Pumcups are long-lived composition cups for packing pistons of reciprocating pumps, pneumatic and hydraulic cylinders. They outlast other types of packing in water, oil, gas, brine, sewage, cement slurries, syrups, refrigerants, marsh, chlorine, CO₂, many acids and alkalies, practically all commercial fluids.

Pumcups save "down time", cut frequency of repacking, save labor and materials. In pumps, they increase pumping efficiency, save power. They are used in hundreds of plants—refineries, railroads, power plants, chemical plants, food plants, steamships, distilleries, breweries, pipe line stations, manufacturing plants of every type. For full information on Pumcups, send for free bulletins No. 4401 if you have reciprocating pumps, No. 4502 if for hydraulic and pneumatic mechanisms.



Air Cylinder Control
for Doors, Gates, etc.

DARLING VALVE & MANUFACTURING CO.
WILLIAMSPORT, PA.

When inquiring specify CP A3299 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

PRODUCTION

13% service factor 60 or 50 cycle, 3 or 2 phase circuits at standard voltages is indicated.

Features — All ventilating openings shielded against the entrance of drippings and falling particles. Oversize ball bearings are provided to carry thrust in addition to the rotor. Patented centrifugal bearing seal permits use of softer grease. Recessed junction box provides ample room for making electrical connections.

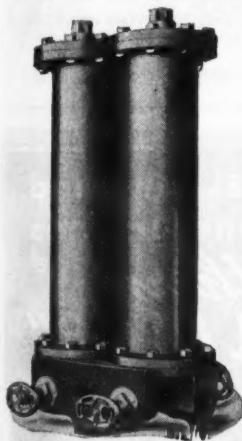
Description — NEMA flange type mountings up to and including the "284" frame, and the NEMA "C" face type mounting up to and including the "326" frame are available. The "Alucast" motor, with bars, fans, end rings cast in one operation from aluminum alloys is used. Other features include: heavy cast frame construction, coils protected with Vinylastic insulation.

JOSHUA HENDY IRON WKS., (Crocker-Wheeler Div.)
Dept. CP, Ampere, N. J.

When inquiring specify CP A3300 — see information request blank, pgs. 2-3

Twin Unit Filter Plant for Small Industrial Services

Easy to install; cleans itself; three types of tubes available



Twin Filter

may be operated at a time or both at once. One tube may be backwashed or cleaned by the filtered water from the other by operating the built-in valve provided for that purpose. Poro-stone and Poro-carbon tones are available, the former being generally selected for filtering city water and it is made in several grades to meet specific requirements. The latter is suggested where the temperature involved might injure ceramic structure but does not withstand thermal shock. A poro-screen tube built-up of Monel cloth is well suited for service conditions where large volumes of water must be filtered with a reasonable degree of separation. Filter body, base and cover of these filters are semi-steel; operating valves brass; maximum operating pressures 200 Lbs. Sq. In. Tube sizes — 3" OD x 2" ID x 24". Illustrated bulletin 675 gives complete details.

R. P. ADAMS CO., INC., Dept. CP, 55 Chicago St.,
Buffalo, N. Y.

When inquiring specify CP A3301 — see information request blank, pgs. 2-3

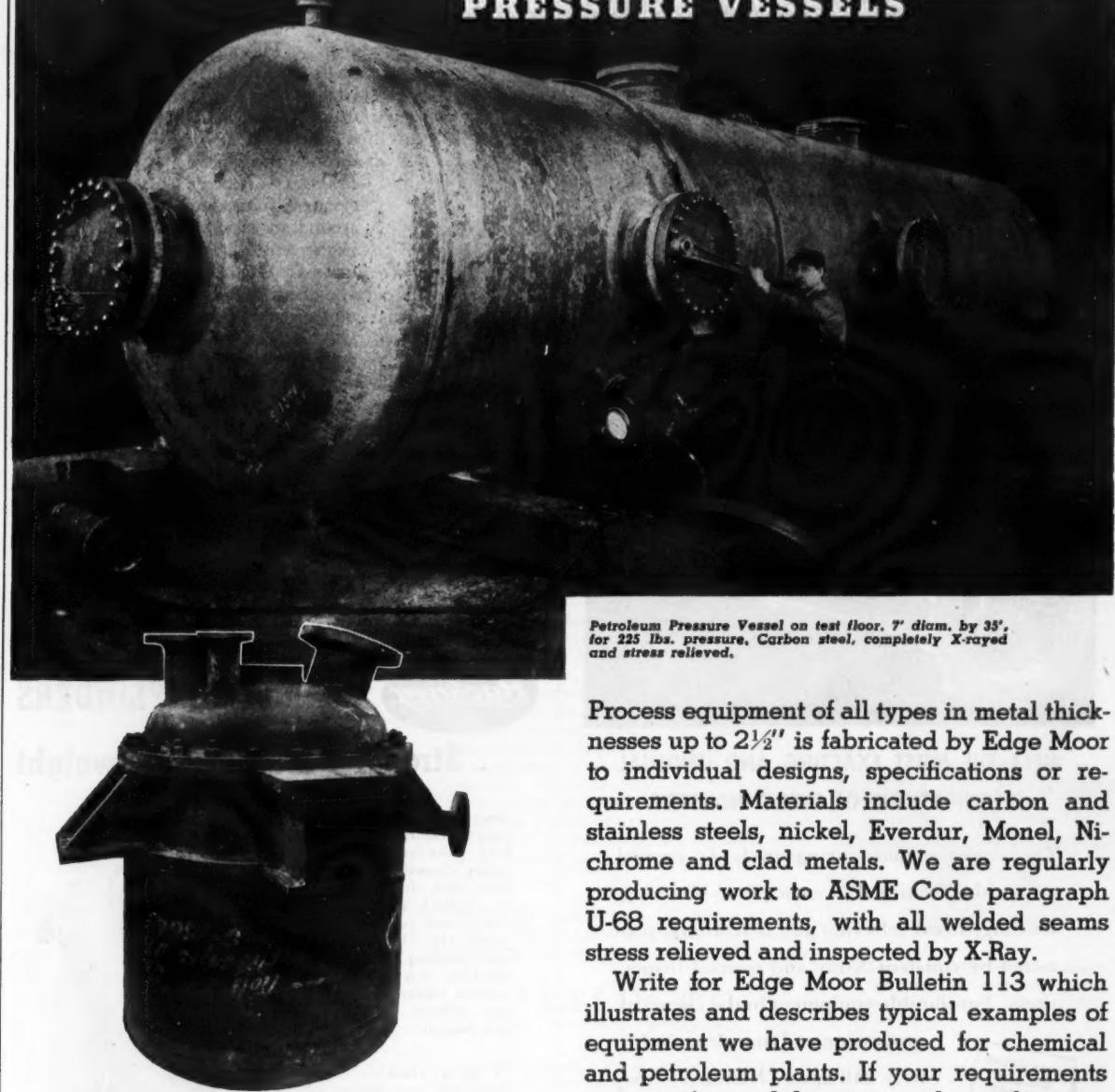
BRANCH OFFICES: NEW YORK 1, N. Y.: EMPIRE STATE BUILDING
CHICAGO 2, ILL.: ONE NORTH LA SALLE STREET

MAIN OFFICE: EDGE MOOR, DELAWARE

When inquiring specify CP A3302 . . . see information request blank, pgs. 2-3

Edge Moor . . .

FOR HEAVY-WALL WELDED PRESSURE VESSELS



Petroleum Pressure Vessel on test floor. 7" diam. by 35", for 225 lbs. pressure. Carbon steel, completely X-rayed and stress relieved.

Process equipment of all types in metal thicknesses up to 2½" is fabricated by Edge Moor to individual designs, specifications or requirements. Materials include carbon and stainless steels, nickel, Everdur, Monel, Ni-chrome and clad metals. We are regularly producing work to ASME Code paragraph U-68 requirements, with all welded seams stress relieved and inspected by X-Ray.

Write for Edge Moor Bulletin 113 which illustrates and describes typical examples of equipment we have produced for chemical and petroleum plants. If your requirements are specific send drawings and specifications for prompt quotation.

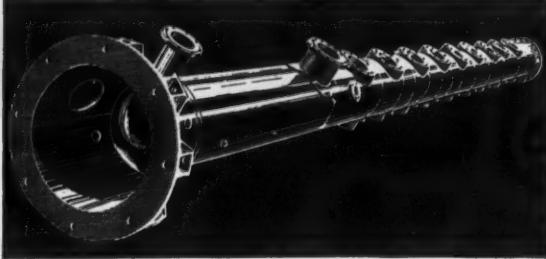
PROCESS EQUIPMENT FABRICATORS:

EDGE MOOR
IRON WORKS, INC.

National WELDED PRODUCTS

From Open Hearth, Stainless, Alloy and Clad Steels

An Intricate Fabrication
for the Petroleum Industry



MEET THE MOST EXACTING AND UNUSUAL SPECIFICATIONS OF EVERY INDUSTRY

The entire manufacturing cycle is carried on within "National's" own plant—forming, welding, stress relieving and machining, protected by constant X-ray and manual inspections. For durable equipment in the chemical, processing and petroleum industries, call upon "National"—they can serve you well!

X-RAY TESTING
API-ASME
U-68 U-69
CODES
STRESS
RELIEVING

National
ANNEALING BOX COMPANY
API ASME U-68 U-69 Codes • Stress Relieving • X-ray
Pledged to Quality Since 1895
WASHINGTON, PENNA.

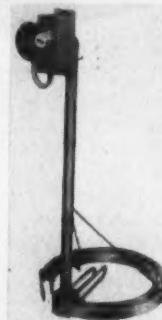
When inquiring specify CP A3303 — see information request blank, pgs. 2-3

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PRODUCTION

Immersion Heater Melts Oily Compounds Right in the Drum

Suitable for use in reducing oils, greases; design eliminates cold areas



Unit melts solid oil which the electrical connections are brought out to a standard conduit box. The heater can be controlled by means of a three-heat switch or thermostat mounted directly on the terminal box. Known as Type BLC Portable Drum Immersion Heater — available for 115 v. or 230 v. single phase current in ratings up to 4400 watts.

EDWIN L. WIEGAND CO., 7517 Thomas Blvd., Pittsburgh, Pa.

When inquiring specify CP A3304 — see information request blank, pgs. 2-3



SEAMLESS CYLINDERS

... Strong, Durable, Lightweight

Strong, durable and lightweight, Hackney Cylinders have been constructed to assure lowest transportation costs, full protection to product, ease of handling and utmost resistance to transportation and handling abuse. The Hackney cold drawing process makes every cylinder uniform in thickness and temper.

In using Hackney Cylinders you are taking advantage of Pressed Steel Tank Company's advanced heat-treating methods, thorough testing, careful selection of raw materials and complete understanding of each requirement. Write today for full details.



PRESSED STEEL TANK COMPANY
Manufacturers of Hackney Products

1463 S. 66th St., Milwaukee 14 1387 Vanderbilt Concourse Bldg., New York 17
208 S. LaSalle St., Room 2085, Chicago 4 568 Roosevelt Bldg., Los Angeles 14

Containers for Gases, Liquids and Solids

When inquiring specify CP A3305 — see information request blank, pgs. 2-3

TWO FAMOUS NAMES

POOL 134 YEARS OF EXPERIENCE

to offer you the only complete materials handling service in America

quality rubber products for industry for 85 years. JOB-ENGINEERED conveyor belts for half a century.

from HEWITT the finest JOB-ENGINEERED materials handling machinery for 49 years.

now—from
HEWITT and ROBINS
the only complete
JOB-ENGINEERED
materials handling
service in America.

HEWITT RUBBER of Buffalo

HEWITT RUBBER CORPORATION
Buffalo, N. Y.

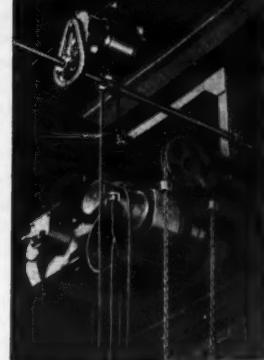
ROBINS CONVEYORS INCORPORATED
Passaic, N. J.

When inquiring specify CP A3306 — see information request blank, pgs. 2-3

MOTOR TRAVEL for Hand Traveled Crane Bridges

THE Northern "TRAVELATOR"

Less than half a day required for application—no dismantling of crane—any good mechanic can apply the Northern "Travelator."



It provides pendant push button controlled electric power travel for hand traveled bridges within the range of 10 tons capacity.

The "Travelator" is an inexpensive, thoroughly effective durable device

Northern

WRITE FOR BULLETIN 8

ENGINEERING WORKS

2695 Atwater Street, Detroit, Michigan
Offices in Principal Cities
Northern Crane & Hoist Works Limited, Windsor, Canada

When inquiring specify CP A3307 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

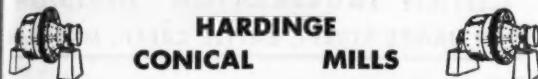


A Hardinge Conical Mill approaches a sphere (greatest volume for a given weight of any solid) with the advantage that the decrease in surface reduces liner weight per unit of mill volume; likewise wear per ton of ore ground is greatly reduced. Lower dead load weight reduces bearing friction and overall power consumption.

Compare this with conventional mill design for a quick idea of why Hardinge Conical Mills grind more per horsepower with less wear. Send for bulletin 13-D and get the whole story.

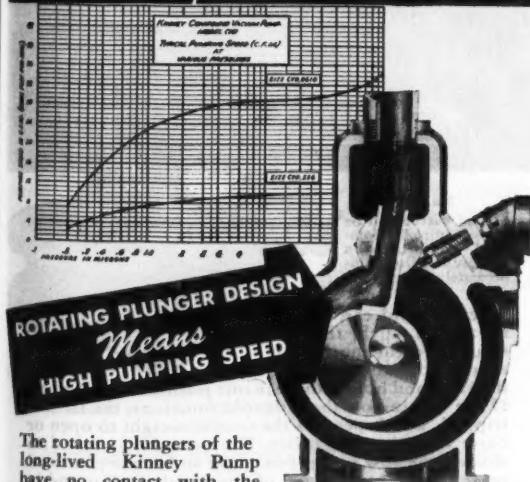
HARDINGE COMPANY

Incorporated
YORK, PENNA.—Main Office & Works
NEW YORK—122 E. 22d St. CHICAGO—205 W. Wacker Drive
SAN FRANCISCO—501 Howard St. TORONTO—200 Bay St.



When inquiring specify CP A3308 — see information request blank, pgs. 2-3

KINNEY High Vacuum PUMPS



The rotating plungers of the long-lived Kinney Pump have no contact with the cylinder walls, all clearances being perfectly sealed and lubricated with oil. Kinney Single Stage Pumps maintain low absolute pressures to 10 microns; Compound Pumps to 0.5 micron or better. Write for information.

KINNEY MANUFACTURING CO.

3573 Washington St., Boston 30, Mass.

New York Chicago Philadelphia Los Angeles San Francisco
We also manufacture Vacuum Tight Valves, Liquid Pumps, Clutches and
Bituminous Distributors.

When inquiring specify CP A3309 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

PRODUCTION

Oscillating Conveyor for Hot, Abrasive Materials

Oscillated by eccentric drive; moves chips, coolant, mill scale 25-50 fpm

Uses — For handling sharp, jagged, abrasive, wet oily and hot material. Installations have been operating in foundries, steel mills and machine shops engaged in war work. Handles hot mill steel or conveying scrap steel away from shears.

Features — The conveyor can be built to handle a wide range of capacities, by simply making the width and depth of its oscillating trough of the right size and installing a power drive of the right horsepower. No spilling of material during conveying as the action levels the material off like water. The wear on the trough itself is small; the forward motion of the material merely giving the trough a high polish. While the conveying is done in a straight line, separately driven sections can be set up at angles to each other. Conveying can be on a downward slope or horizontally. There are no moving parts in respect to each other except the drive. There are no joints that may be attacked by abrasion;



Oscillating conveyor — short hanger type

also there is no return run to carry back materials or require attention. Discharge from one conveyor to another set at right angles is with less drop than required for a similar transfer with belt or apron types. By additions of partitions more than one material may be handled simultaneously without mixing and discharged to different points along the conveyor.

Description — The conveyor consists of a flexibly supported plate steel trough of rectangular cross section, oscillated by eccentric drive. Movement of most materials is 25-50 ft. per minute. Two types: short hanger and long hanger. First is recommended where trough tunnels below conveyor are permissible or where it is possible to floor mount conveyor. Latter can be installed in shallow trench along floor of machine shop. Only shallow trench is needed for short-hanger type in handling hot mill scale. Folder Number 2088 on request.

LINK-BELT CO., Dept. CP, 307 N. Michigan Ave., Chicago, Ill.

When inquiring specify CP A3310
— see information request blank, pgs. 2-3

3 "OLD TIMERS"



S. Inglis Leslie, President, and R. J. (Bob) McIlwain, oldest employee and foundry consultant, inspect 35-year-old veteran LESLIE Reducing Valve.

The above illustration marks three separate yet closely related records of service, each indicative of long-term LESLIE quality and reliability.

For the recent arrival of a 10 in. LESLIE Class F Reducing Valve back for its first repairs after 35 years of hard service, likewise marked 40 years of service with LESLIE CO. of two men closely identified with long-life records of LESLIE Products.

This Reducing Valve, used for controlling steam to reciprocating engines, needed only minor repairs. Following that, it was again returned to the same service, after receiving (and successfully standing) the same rigid maximum steam pressure and operating tests which it underwent prior to shipment 35 years ago—ample indication of a quality that has kept abreast of the best in materials for regulator manufacturing and performance.

To borrow the words of one user, "These Reducing Valves give unbelievable satisfaction. Their constant reliable performance will please any engineer. They are as reliable as the setting sun."

SEND FOR your copy of Bulletin 401-A giving latest engineering data on Pressure Reducing Valves for steam and air service.

LESLIE CO.

281 Grant Avenue • Lyndhurst, N. J.

LESLIE factory-trained engineers to help you with your regulation problems are located in these cities:

Baltimore, Md.
Boston, Mass.
Bridgeport, Conn.
Chicago, Ill.
Cleveland, Ohio

Detroit, Mich.
Fremont, Neb.
Hoboken, N. J.
Houston, Tex.
Kansas City, Mo.

Los Angeles, Cal.
Louisville, Ky.
Milwaukee, Wis.
New Orleans, La.
New York, N. Y.

Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
Providence, R. I.
Richmond, Va.
Rutherford, N. J.
San Francisco, Cal.
Seattle, Wash.
St. Louis, Mo.
Syracuse, N. Y.
Troy, N. Y.
Wilkes-Barre, Pa.
Wilmington, Calif.
Youngstown, Ohio



PRESSURE REDUCING VALVES • PUMP GOVERNORS • PRESSURE CONTROLLERS
TEMPERATURE REGULATORS • SELF CLEANING STRAINERS • LESLIE-TYFON WHISTLES

When inquiring specify CP A3311 — see information request blank, pgs. 2-3

Page 93

Smooth VIBRATIONLESS MICHIGAN MACHINED-PITCH PROPELLERS

for MIXING or
AGITATION

Available in a wide range of sizes, models and metals to ideally suit practically every requirement . . . whether for original equipment replacement or special application. Made by our exclusive "Machined-Pitch" method which means that they are absolutely accurate as to pitch, balance and blade spacing. This assures less "whip" on the shaft and less wear on connecting couplings and motors. FREE CONSULTIVE ENGINEERING SERVICE.

Write for complete details and prices NOW!

• BLADE MODELS IN
DIAMETERS OF
3 inches to 18 inches
• SLEEVES MODELS IN
DIAMETERS OF
3 inches to 12 inches

MICHIGAN WHEEL CO.

232 Market Ave., S. W., Grand Rapids 3, Mich.

When inquiring specify CP A3312 — see information request blank, pgs. 2-3

Page 94

PRODUCTION

Industrial Hose Coupling Brings Water Pressure to Nozzle End

Withstands pressure of 600 psi; eliminates water waste; two sizes $\frac{5}{8}$ " and $\frac{3}{4}$ " standard



Aluminum hose coupling — only 2 moving parts

Operation — The two part aluminum unit includes a threaded end section that applies on a standard threaded faucet and a ring equipped section for application in the end of a length of hose. The ring is pulled back by a spring, moves axially over a set of hinged dogs. It is knurled to provide an operating grip. Moving the ring back against the spring permits the dog to swing open and

Uses — This industrial hose coupling has been especially designed to cut water bills to a minimum; built to withstand water pressure of 600 psi, it brings the full water pressure right to the end of the nozzle. **Features** — Made of light weight aluminum with only two moving parts; completely eliminates water waste.

The publication of this book started men of industrial plants and railroads thinking along new lines.

Out of this book stemmed the material handling principles and methods that have enabled the Army and Navy to successfully handle in this war the burden of supplies, munitions and equipment.

CLARK TRUCTRACTOR DIVISION
1009 JAMES STREET, BATTLE CREEK, MICHIGAN

When inquiring specify CP A3314 — see information request blank, pgs. 2-3

QUICKER HEATING

- Small Size
- Light Weight
- One Moving Part
- Low Price

OVER
400,000
SOLD

Sold by more than 100 Mill Supply Distributors throughout the U. S. A. See your supply house or write for Catalog T-1739

YARNALL-WARING CO., 125 Mermaid Ave., Phila. 18, Pa.

YARWAY
IMPULSE STEAM TRAP

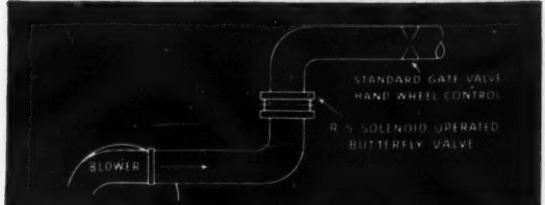
When inquiring specify CP A3313 — see information request blank, pgs. 2-3

This Book...
**REVOLUTIONIZED
MATERIAL
HANDLING**

...it defined and crystallized the unit packaging method

American Inventor of CLARK Material Handler

Immediate SHUT-OFF!



No. 628

Should current fail or blower stop, R-S Solenoid Valve installed on hot gas line closes immediately.

The solenoid can be arranged with the counterweight mechanism to open or close the valve and hold it there in one position or the other. If for any reason the solenoid functions, the latch is tripped, which permits the counterweight to open or close the valve by gravity. The assembly is suited to shut off the flow or to open a vent and requires manual reset. Can be constructed of any metal or alloy and in various sizes for air, gases, steam, oil, hydraulic and other services.

VALVE DIVISION
R-S PRODUCTS CORPORATION
4531 Germantown Avenue • Phila. 44, Pa.

R-S
Streamlined
BUTTERFLY VALVES

When inquiring specify CP A3315 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

PRODUCTION

clear open and clear a holding ring integral on the shank of the section applying on the faucet. Releasing the ring after the two coupling sections have been brought together, closes the dogs inward to grip the ring and hold the assembly together. The shank on the faucet section rides inside a rubber gasket in the ring section to prevent leakage at normal hose pressure.

Description — Made in two convenient sizes: $\frac{5}{8}$ " and 3"

standard.

E. B. WIGGINS OIL TOOL CO., INC., Dept. CP, 3424 East Olympic Blvd., Los Angeles 23, Cal.

When inquiring specify CP A3316 — see information request blank, pgs. 2-3

Homogeneous Steel Plate Platen Has Rectangular Steam Passage

Rapid heat transfer; no plug leaks; easy cleaning; adaptable to special requirements



Platen labyrinth

Uses — This steam platen is designed for more uniform surface temperature and more rapid heat transfer in connection with processing chemicals, rubber, plastics, linoleum, plywood and similar materials.

Features — This steam platen is a rolling mill product in which three separate plates are bonded homogeneously into one unit. The rolled steel center plate is flame-cut to any desired labyrinth design, depending upon service requirements. The platen may be treated as a single piece of steel. Sizes are practically unlimited. Since the platen is a homogeneous rolled steel plate there are no plug leaks. Design of platen promotes unobstructed steam circulation, minimizing erosion and facilitates cleaning.

Description — Each platen is engineered to fit the conditions under which it is to be used, assuring resistance to internal and external pressures. (A standard inspection test of 1000 psi internal hydraulic pressure has been adopted, though during development, consistently higher pressures were resisted satisfactorily. Where necessary, steel of higher wear-resisting qualities may be applied as the top and bottom plates. Bulletin 265 available on request contains drawings and photos showing details and installation of platens of rectangular, square, drum and other types.

LUKENS STEEL CO., Dept. CP, 290 Lukens Bldg., Coatesville, Pa.

When inquiring specify CP A3317 — see information request blank, pgs. 2-3

Manual Lists 40 Types of Valve Lubricant

Revised manual gives complete instruction on use of lubricants in plug valves and lists 40 types in stick and bulk form, including silicone type. More than 100 specific valve services are included, with corresponding lubricant recommendations, for various conditions of line fluid, temperature and pressure. Manual No. v-105, Rev. 6 on request.

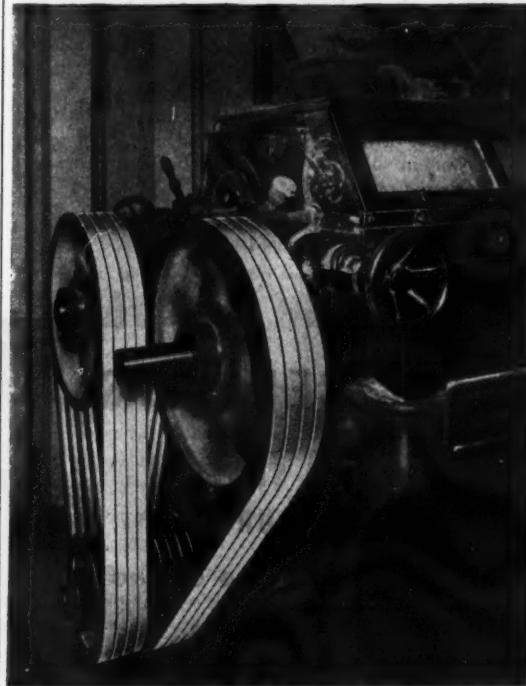
MERCO NORDSTROM VALVE CO., Dept. CP, 400 Lexington Ave., Pittsburgh, Pa.

When inquiring specify CP A3318 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

*The reason
for this fact
is worth knowing*

Your **STANDARD GATES VULCO ROPES** are TODAY out-performing **ANY V-Belts *EVER* Built Before!**



All Gates V-Belts
are Built with
The Patented



During the war, our Army tanks, tractors and self-propelled big guns required, for combat service, V-belts built to performance standards never dreamed of before. Gates developed these greatly superior V-belts through intensified, specialized research — and here is what this NOW means to you:

*Here is
the reason*

Every improvement developed by Gates for these Army V-belts has also been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

Here is one rare instance in which you have received immediately the full advantage of war-time improvements developed primarily for military use. Ordinarily, you have to wait. But in the case of Gates V-belts, everyone recognized the vital role they played in maintaining the production that proved so essential in winning the war.

That is why Gates has been able to pass on to you, day by day, every V-belt improvement developed for our armed forces during the war — and that is why your Standard Gates Vulco Ropes are today outperforming any V-belts ever built before!



THE MARK OF SPECIALIZED RESEARCH

THE GATES RUBBER COMPANY

Engineering Offices and Jobber Stocks in All Large Industrial Centers

4811

GATES VULCO ROPE DRIVES

CHICAGO 6, ILL., 549 West Washington. NEW YORK CITY 3, 215-219 Fourth Avenue. ATLANTA 3, GA., 521 C. & S. Nat'l Bank Bldg.

LOS ANGELES 21, CAL., 2240 E. Washington Blvd. DENVER 17, COLO., 999 S. Broadway. DETROIT 2, MICH. 223 Boulevard Bldg.

PORTRLAND 9, ORE., 333 N.W. 5th Ave. DALLAS 2, TEXAS, 1710 N. Market St. SAN FRANCISCO 3, CAL., 170 Ninth St.

When inquiring specify CP A3319 . . . see information request blank, pgs. 2-3

Page 95

Jacketed Pipe and Fittings



Jacketed 90° Elbow

FOR MAINTAINING
UNIFORM TEMPERATURE (HOT
OR COLD) IN PROCESS PIPES

Wherever processing operations require the maintenance of uniform temperature (hot or cold) in the process pipes, a Hetherington & Berner Jacketed Pipe System will meet every requirement of accurate, economical processing. Heating medium may be either hot oil for high temperatures, steam for medium temperatures, or hot water for low temperatures. Cold water for cooling.



Jacketed 3-way Plug Cock.
Note threaded plug ad-
justment, with lock nut.

Write for Bulletin S-44



At right: Jump-over
pipes prevent heating
(or cooling) medium
from entering process
pipe in transferring it
from jacketed line to
fitting, or from fitting
to fitting.



HEHERINGTON & BERNER INC.

711 KENTUCKY AVE., • INDIANAPOLIS 7, INDIANA

When inquiring specify CP A3320 — see information request blank, pgs. 2-3



CLASS 14500—for
closing light and me-
dium weight cotton,
medium weight
burlap and paper
bags. Double locked
bags. Double locked
or chain stitch as de-
sired.

CLASS 80600—for
closing heavy bags,
either paper or fab-
ric. Fully enclosed for
protection of parts
from dirt and foreign
matter. Double locked
or chain stitch.

STYLE 60000 D—for
producing the famous
Union Special Dub-
line sewed closure
on paper bags of
from 1 lb. to 50 lb.
size. Widely used for
consumer packaging.

REAP THE BENEFITS

MACHINE SEwed BAG CLOSURES

WITH UNION SPECIAL BAG CLOSING MACHINES

With the line of Union Special filled bag closing equipment available, there is no reason any plant, regardless of size, should not have the benefits of machine sewed bag closures. Union Special offers machines for closing fabric or paper bags of one pound or less, up to the largest jute or multiwall bags manufactured. Equipment includes sewing heads, columns, tables, conveyors and accessories. No other method of bag closing has ever offered the same production possibilities, economy, flexibility and security of closure. For full information write for Bulletin 200.

Union Special
Machine Company

442 N. Franklin Street
Chicago 10, Illinois

ORIGINATORS OF FILLED BAG CLOSING EQUIPMENT

When inquiring specify CP A3323 . . . see information request blank, pgs. 2-3

PRODUCTION

Cast Alloy Steel Fans for High Temperature Applications Involving Hot Gases

High temperature fans for handling hot gases or products of combustion where temperature requirements range from as high as 1800 degrees F. are described and illustrated in four page bulletin. Applications in annealing, hardening, galvanizing, tin plating operations. The construction of these fans eliminates the use of screws, bolts, rivets and welds. The vital operating parts are so assembled that they are free to expand and contract independently of each other radially and axially, thus distortion is avoided and fan wheel remains in balance. Full range of sizes and capacities ranging upward from 400 cfm. Bulletin 645 on request.

MICHIGANA PRODUCTS CORP., Dept. CP, Michigan City, Ind.

When inquiring specify CP A3321 — see information request blank, pgs. 2-3

Extruded Synthetic Resin Tubing Stands 380° F.

Single page bulletin lists specifications and applications and properties of a recently developed plastic tubing. Data on dielectric strength, dielectric strength and power factor, arc resistance, oil resistance, etc., all conveniently tabulated. Findings of effect of chemicals as revealed in tests of seven days immersion in solvents. Copies of bulletin and additional information on request.

THE NATIONAL VARNISHED PRODUCTS CORP., Dept. CP, 1313 W. Randolph St., Chicago, Ill.

When inquiring specify CP A3322 — see information request blank, pgs. 2-3

Now Also Available in NEW LIGHT DUTY STYLE

All-Neoprene Latex INDUSTRIAL GLOVES

Impermeable to practically
All Acids and Caustics

Highly Resistant to Oils
and Greases

5 POPULAR STYLES

★ No. 5760-5, 18" LONG
EXTRA LONG GAUNTLET
GAUGE .030 TO .040
SIZES 10-11

★ No. 5737-2, 14" LONG
LONG GAUNTLET
GAUGE .030 TO .040
SIZES 9-10-11-11½-12

★ No. 5705-5, 11" LONG
SHORT GAUNTLET
GAUGE .020 TO .025
SIZES 9-10-11

★ No. 5703-5, 10½" LONG
STANDARD DUTY
GAUGE .015
SIZES 7-8-9-10-11

★ No. 5702-5, 10½" LONG
LIGHT DUTY
GAUGE .010 TO .012
SIZES 7-8-9-10-11

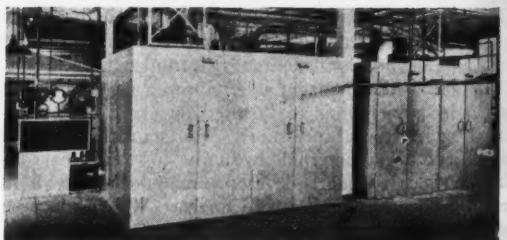
SEIBERLING LATEX PRODUCTS CO.
AKRON, OHIO

200-5th Ave., Bldg., New York

Merchandise Mart, Chicago

When inquiring specify CP A3324 — see information request blank, pgs. 2-3

PLAN NOW for BETTER FINISHING



with KIRK & BLUM INDUSTRIAL OVENS

In the fast-developing "battle for markets," competition will be keener than ever before in our history. What of your product finishing equipment . . . will it be able to carry on under the increased load, meet new and higher finishing standards, enable you to take utmost advantage of your opportunities?

The Kirk & Blum Engineering Staff is thoroughly grounded in the planning, design and erection of complete finishing equipment. These systems are guaranteed to increase production, reduce fuel and labor costs, conserve floor space, promote maximum safety.

Send for Booklet "Industrial Ovens"

The KIRK & BLUM Manufacturing Co.

An Organization of Engineers and Mechanics
2833 SPRING GROVE AVE. CINCINNATI 25, OHIO

When inquiring specify CP A3325 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

PRODUCTION

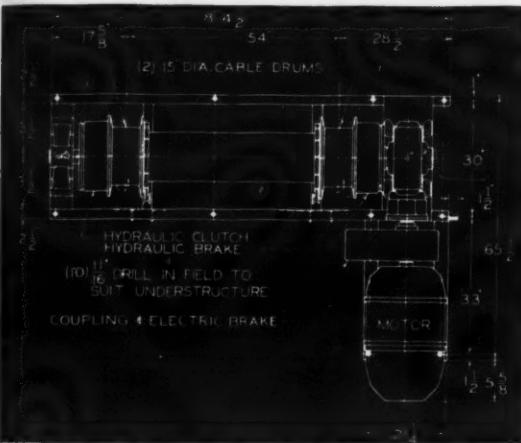
Hoist and Slicer Bar Speed-up Unloading Frozen Coal from Cars

Easily controlled hoist provides efficient operation of bars in freeing coal in hopper cars

Uses — The coal slicer hoist (see cover illustration) raises and lowers a slicer bar which chops up the coal so that it will flow freely into the hopper of the conveyor. The coal slicer bar in combination with the hoist also helps to remove the coal from the various pockets of the hopper car to the open bottom.

Features — There is a fast and clean unloading of the coal, eliminating the manual labor formerly involved in the use of crowbars, sledges, shovels, torches, and in some cases elaborate thawing ovens.

Description — Coal shipped from mines in hopper cars gets wet, congeals, hardens, and freezes in transit making



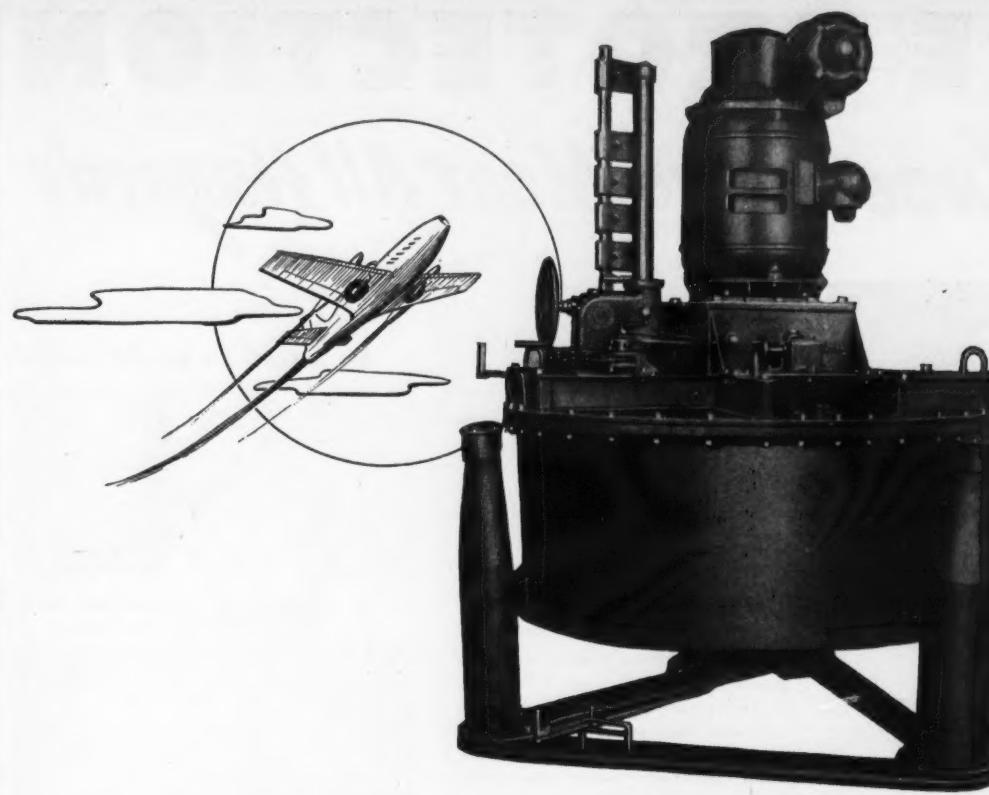
GENERAL ARRANGEMENT OF HOIST ASSEMBLY

unloading difficult upon arrival. The Model TWWX Silent Hoist efficiently operates slicer bars to speed up the unloading of such coal reducing time and labor usually involved. The hoist is equipped with special hydraulic friction clutches and brakes, having unusually large mechanical advantages, requiring little effort by the operator to engage the clutch or bale on the drums. For applications where the volume is large the hoist is available with pneumatic control and the operator can slice coal all day without fatigue. Specifications: capacity 6000 lbs. at 105 ft. per min. (Slicer bars which weigh about 6000 lbs. and cables can be furnished by customer) Drums: diameter 15", spaced 4'6" center to center. Drums are made of fine grade cast iron, with machined surfaces for the internal clutch and brake and fitted with cooling fins on exterior. Cable guards are provided for each drum. Gearing totally enclosed worm drive; built-in primary spur gear reduction; steel flexible coupling between gearing and motor. Clutches and brakes: internal 2 shoe 6" wide; weather proof molded lining; hydraulically actuated. Motor is 30 hp. high torque and fitted with electric brake. Hoist assembly as described with motor and electric brake, mounted on a welded steel bed plate, but without other accessories, weighs about 4000 pounds. Accessories include a magnetic controller and spring loaded shock absorbers, one for each cable. Descriptive folder on request.

SILENT HOIST & CRANE CO., Dept. CP, Brooklyn 20, N.Y.

When inquiring specify CP A3326 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945



MORE SPEED IN SMALLER PACKAGES

IMPREGNATION: *AT&M Centrifugal Handles Reversed Pressures.* Processes calling for several physical conditions to be controlled in sequence prove the versatility of AT&M Centrifugal engineering. By combining several actions in one basket, AT&M centrifugals often do the work faster in smaller space.

A manufacturer of synthetic fibre needed to impregnate a raw material with acid, under pressure, then switch to vacuum at a critical point where the material might turn to gas, if not cleared of acid quickly. A special AT&M vacuum machine with clamp cover impregnates the load, whirls off the surplus fluid and quick-dries the batch under vacuum.

EXTRACTION: *AT&M Centrifugal Separates 3 Ways.* AT&M engineering has developed many improvements in unloading devices which permit simultaneous discharge of two or more substances at different levels. With this equipment and the superior separating power of centrifugal force, difficult and time-consuming processes can be speeded up and more production obtained in less area.

One manufacturer's process gave him an intermediate product which was a valuable meal-like substance containing oil and water. By designing a special basket AT&M engineers were able to captivate the meal as solids while decanting the water and oil separately.

SAVE TIME, SPACE AND COSTS WITH

**A.T. and M.
CENTRIFUGING**

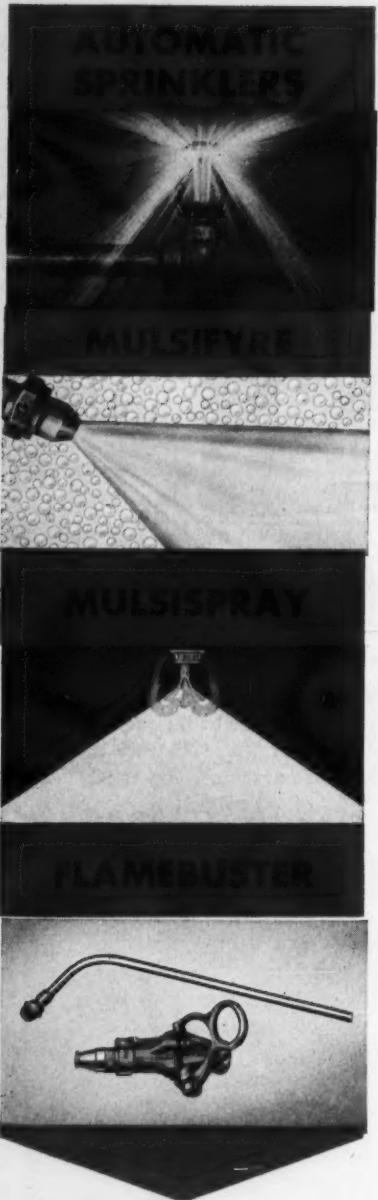
Consider Centrifuging for
extraction . . . filtration . . . dehydration . . . precipitation
. . . impregnation . . . coating. See AT&M's 4-page catalog
in CHEMICAL ENGINEERING CATALOG.

Consider AT&M for
capable engineering service — no charge for study and
recommendation. Centrifugal sand baskets in all machin-
able metals and coatings. Strict confidence preserved.
AMERICAN TOOL & MACHINE COMPANY, 1425
Hyde Park Ave., Boston 36, Mass., 30D Church Street,
New York 7, N.Y.

When inquiring specify CP A3327 . . . see information request blank, pgs. 2-3

FIRE PROTECTION

Engineered to Meet All Hazards



FOR ORDINARY RISKS . . .

Grinnell Automatic Sprinkler Systems protect over 70 billion dollars' worth of property. When fire occurs, heat causes the sprinkler head above it to open at a predetermined temperature and release a deluge of water on the fire.

FOR FLAMMABLE LIQUIDS . . .

Grinnell Mulsifyre Systems extinguish fires in flammable liquids. Widely used to protect transformers, oil lines, quench tanks and bilges of oil-burning ships. A permanent piping system equipped with either high or low velocity heads. Water spray converts burning liquid into an emulsion incapable of burning.

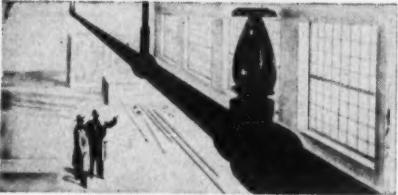
FOR PROTECTION BY COOLING . . .

Grinnell Mulsispray System protects tanks when exposed to adjacent fires. Protection is afforded by cooling the surface of the tank below the flash point of the contained gas or liquid.

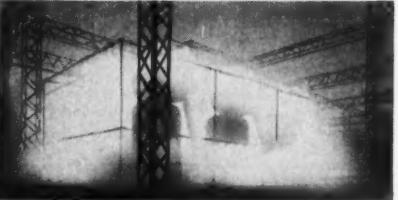
FOR MANUAL FIRE-FIGHTING . . .

Grinnell FlameBuster is a three-purpose portable hose nozzle. Low velocity spray, from 4' or 10' applicator, for stubborn fires in light, flammable liquids; high velocity spray for fires in heavier oils; and solid stream for mopping up operations.

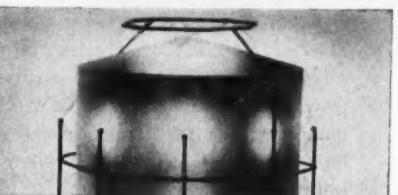
ON GUARD 24 HOURS A DAY



PROTECTS 20,000,000 KVA TRANSFORMER CAPACITY



SAFEGUARDS TANKS OF EXPLOSIVE MIXTURES



KILLS OIL FIRES FAST



For complete information on any of these systems, write Grinnell Co., Inc., Executive Offices, Providence 1, R. I. Branch offices in principal cities.

PRODUCTION

Segments & Hemispheres for Spherical Tanks; Parts for Small Tanks Available

Those in any way concerned with the use of spherical pressure tanks will find a recently issued booklet on parts for such tanks of the greatest practical interest. More than a year ago this company introduced a line of parts for spherical tanks and this literature embodies the latest and revised data. Included in the text is a brief, informative discussion of the place of the spherical tank in the liquefied petroleum gas industry. The future of propane is similarly discussed and in this connection the matter of 200 pound tanks. This organization manufacturers the segments and hemispheres only and does not assemble completed spheres. All parts supplied are made from flange quality steel, conforming to ASME and ASTM specifications, with a minimum ultimate tensile strength of 55,000 psi. In certain cases, this supplier states that quotations may be made on high tensile steel with minimum tensile strength greater than 55,000 psi. Spherical parts made with such steel may be supplied on special application. Tables cover standard spherical parts that are supplied and are based upon the very latest code regulations. Both tables are based upon the use of the completed sphere as an above ground storage tank. Special attention is called to the parts for small spherical tanks that are available to manufacturers. Copies of booklet — "Commercial Parts for Spherical Tanks" on request.

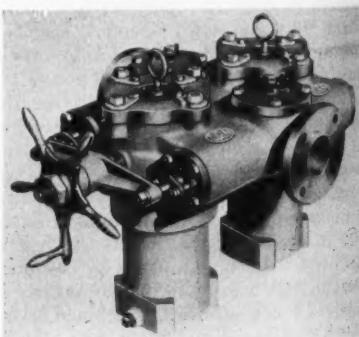
COMMERCIAL SHEARING AND STAMPING CO., Dept. CP, Youngstown, Ohio.

When inquiring specify CP A3328 — see information request blank, pgs. 2-3

Pipeline Strainer has Basket in Eccentric Position to Chamber

Duplex vertical chamber disc type unit; handwheel reverses valves simultaneously with minimum pressure drop

Uses — To assure continuous flow in pipelines. This duplex vertical chamber disc type strainer is operated by a large handwheel that reverses valves simultaneously with a minimum pressure drop. Capacity flow is assured at all positions of the operating handwheel. Protects pumps, traps, primary equipment.



Duplex pipeline strainer

Protects pumps, traps, primary equipment.

Features — An unusual feature is the eccentric position of the strainer basket, with respect to the basket chamber, so that the flow section is proportional to the flow needs at all points, minimizing pressure drop. The usual practice of setting the strainer basket concentrically creates a fluctuating flow of liquids in regard to flow needs and tends to stimulate fluid friction loss.

Description — Removable covers provide easy access to the basket chamber and permit easy and complete cleaning. Large handholes above each valve assembly permit servicing

When inquiring specify CP A3328 . . . see information request blank, pgs. 2-3

PRODUCTION

of the valves without removing the strainer. This unit protects all kinds of pumps, traps, injectors, etc. It is made in cast bronze, steel, semi-steel, and cast iron; the basket of perforated brass, Monel and other specified metals.

J. A. ZURN MFG. CO., Dept. CP, Erie, Pa.

When inquiring specify CP A3330 — see information request blank, pgs. 2-3

Grounded Universally Adjustable Work Lights

Four types of shades; cone, parabola, bell, acorn



Light for work benches

Uses — An improved type of work light for attachment to work benches, machine tools, desks and other working areas.

Features — Unit is furnished with "Greenfield" cable and leads for direct attachment to outlet box or transformer, thus grounding the entire unit. The universally adjustable "Swivelier" socket will not work loose as a result of vibration; stays put at an angle; no wing nuts or set screws to tighten; easy to adjust; "stop" prevents wires from twisting.

Description — Arms are from 12" to 30" long; four types of shades: cone, bell, parabola and acorn with or without removable glass lens — frosted, clear or daylight. The entire arm of the work light is also universally adjustable in the base which is made with the same type of spring construction used in this maker's other lights. Catalog III illustrates this and gives complete details on other lighting units.

SWIVELIER CO., Dept. CP, 30 Irving Place, New York 3, N. Y.

When inquiring specify CP A3331 — see information request blank, pgs. 2-3

Blast Heaters & Booster Units

Blast heaters and booster units are described in detail in twenty-page catalog — Number 345. Specialized requirements have greatly influenced the design of these units. Whether installed as components of a complete system or built into manufactured air handling equipment or drying machines they function to high demands. Sectional photographic views and tabulated data conveniently present features and specifications and SD types — steam distribution type blast heaters are designed for those applications where temperature control is achieved by modulation of the steam supply. Their ability to resist freezing recommends them for use as outside preheaters. The booster units meet the requirements for blast heaters with small face areas for use in heating, ventilating and air conditioning systems and in drying and processing work involving relatively small volumes of air. They are most commonly used for control of air temperatures in individual ducts. Copies of this bulletin are available on request.

MODINE MFG. CO., Dept. CP, Racine, Wis.

When inquiring specify CP A3332 — see information request blank, pgs. 2-3

HAMER PLUG VALVES **NEVER STICK**



Acting as a powerful screw-jack to lift the plug in the body and to return it to perfect adjustment, the exclusive plug-adjusting feature assures that Hamer Plug Valves will always operate, instantly and easily, under any conditions of service.

When inquiring specify CP A3333 . . . see information request blank, pgs. 2-3



New REFRIGERATION CATALOG

No refrigeration engineer, designer, serviceman or purchasing agent should fail to write for our newest Refrigeration catalog. It's free—and chock-full of detailed data on the multitude of refrigeration parts that are both original installation and replacement items. For information or literature write or phone any Weatherhead branch office.

Weatherhead
THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO
Branch Offices: New York, Philadelphia, Detroit
Chicago, St. Louis, Los Angeles

When inquiring specify CP A3334 — see information request blank, pgs. 2-3

GLASS TANKS
CAN
DO YOUR
JOB

Glass Tanks by "Pittsburgh" are designed to end your tank troubles.

TOUGH. Glass tanks are made of specially tempered glass to withstand hard usage. Are impervious to acids, alkalis, nearly all chemicals.

NO CONTAMINATION. Non-porous, non-absorptive, non-staining.

PRACTICAL. There's a glass tank of the size and type you need. For example: tanks made of transparent glass; or opaque Carrara Structural Glass; or your present tanks can be relined with glass.

Send the coupon today for the facts about
GLASS TANKS BY "PITTSBURGH"

Pittsburgh Plate Glass Company
2393-5 Grant Building, Pittsburgh 19, Pa.

Please send me, without obligation, free literature on Glass
Tanks by "Pittsburgh."

Name.....

Address.....

City..... State.....

PITTSBURGH PLATE GLASS COMPANY

When inquiring specify CP A3335 — see information request blank, pgs. 2-3

PRODUCTION

White Synthetic Rubber Aprons

For laboratory technicians and those testing, producing drugs, foods and similar products



Style One Apron

INDUSTRIAL PRODUCTS CO., Dept. CP, 2820 N. 4th St., Philadelphia, Pa.

When inquiring specify CP A3336 — see information request blank, pgs. 2-3



BUSCHMAN Portable Conveyor

transports, by gravity, packages, cartons, cases, etc., to and from production lines, storage, loading docks. Convenient to carry from place to place where needed. Easily, quickly set up and coupled to any length, thru exclusive "Quick-Eez" coupling feature.

In standard 10' and 5' sections; straight and curved. Wheels are free-running, full ball-bearing. Sturdy stands are adjustable in height. Mobile units, straight and curved, mounted on swivel casters, are available.

THE E. W. BUSCHMAN CO., Inc.
413 New Street Cincinnati 2, Ohio

When inquiring specify CP A3337 — see information request blank, pgs. 2-3

HAVE YOU A MOISTURE TESTING PROBLEM?

T he STEINLITE 40 gram One Minute Moisture Tester.



If so, let us help you solve it with the Steinlite Electronic Moisture Tester . . . which tests a wide variety of products . . . dehydrated foods — dried eggs, nuts, cocoa, and many others . . . new applications are constantly being found. There are more Steinlites in use than all other makes of electrically operated moisture testers combined.

Almost anyone can learn to operate the Steinlite in a short time. No special education or training is necessary. About all one does is (1) weigh out a sample, (2) pour it into the Steinlite hopper, (3) read a meter dial, and (4) compare the reading with a chart showing percentage of moisture. Operates on the radio frequency impedance principle, and is checked against official oven methods. Sold on FREE TRIAL basis. No money down. \$325.00 F. O. B. Atchison, Kansas.

SEEDBURO

EQUIPMENT COMPANY

667 Brooks Building

Chicago 6, Illinois

When inquiring specify CP A3338 — see information request blank, pgs. 2-3

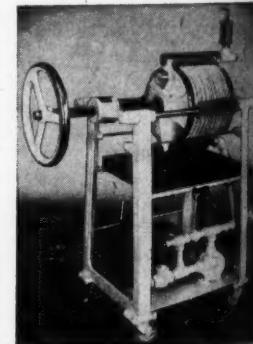
THE ERT

MODEL EW

Asbestos Disk

Filter

CAPACITY FROM
5 TO 20 GPM



This Ertel filter, one of the many different models available for particular applications, will accommodate from six to fifty 12 1/4 inch Ertel Asbestos Filter Disks. Standard equipment includes silent operation pump and motor. Has manual by-pass pressure control. Can be used as portable unit or part of permanent installation. Ertel engineers will recommend the correct type and size for any particular requirement.

CATALOG { The fully illustrated Ertel Catalog-12 describes the complete line of Ertel Liquid Handling Equipment. Send for a copy today; no obligation of course.

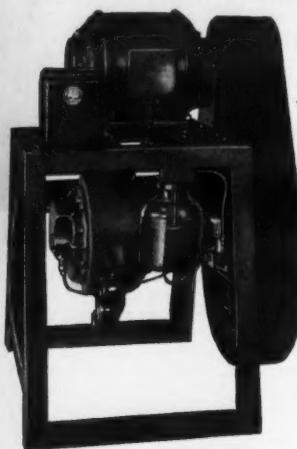
ERT ERT
CORPORATION
MANUFACTURERS
NEW YORK CITY SALES OFFICE AND SHOWROOM
411 WEST 46TH STREET NEW YORK 19, N. Y.
LIQUID HANDLING EQUIPMENT ENGINEERS

When inquiring specify CP A3339 — see information request blank, pgs. 2-3

ROTARY **LAMMERT** QUIET

VACUUM PUMPS

VACUUM TO 0.02 M.M. BAR. 3-580 C.F.M.



ENDURING HIGH VACUUM

Investigate!
MODEL SWMF.

NEW!

Continuous
Self
Purging
Principle
Expels the
Contaminating
Influence!

PERFORMANCE

LAMMERT & MANN CO.
215-21 N. WOOD ST. CHICAGO 12, ILL.

A HALF CENTURY OF SERVICE
TO SCIENCE AND INDUSTRY

When inquiring specify CP A3340 — see information request blank, pgs. 2-3

HERE'S PERMANENT HEATING EQUIPMENT **GRID UNIT HEATERS**

withstand
High Corrosive
Gases

HERE'S WHY ...

• One piece construction heating sections (patented) of high test cast iron that will withstand steam pressures up to 250 lbs.

• No soldered, braised, welded or expanded connections to become loose or develop leaks.

• No electrolysis to cause corrosion, break-downs, leaks or heating failures.

That's why GRID UNIT HEATERS withstand the corrosive fumes of HCl and Cl₂ and operate efficiently for 8 or 10 years without maintenance.

New booklet "Corrosion in Unit Heaters" contains information you should know before you install unit heaters. It's free upon request. Send for it today.

HIGH TEST
CAST
IRON
HEATING SECTIONS

SEND

D. J. MURRAY MANUFACTURING CO.
WAUSAU • WISCONSIN Offices in all principal cities.

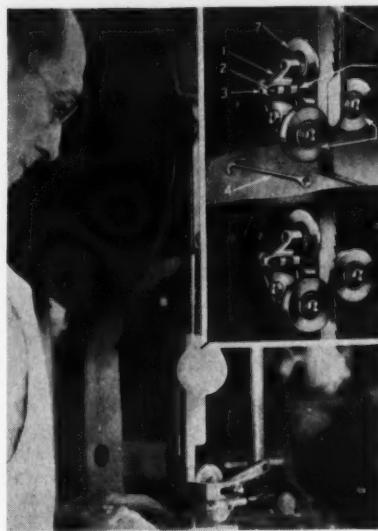
When inquiring specify CP A3341 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

PRODUCTION

Band Saw Guide and Metal Safety Guard

Smooth operation, clean cut, less
breakage in cutting wood,
metal, plastics



Saw guide-safety guard for blades 1/4-1 1/2 ins.

Uses — Especially designed for use with metals and plastics as well as wood.

Features — This band saw guide and metal safety guard with slide wheels mounted in a staggered position to eliminate binding; grooved back wheel to hold saw in position; all equipped with double sealed, permanently lubricated ball bearings assures clean accurate cut, reducing breakage to a minimum.

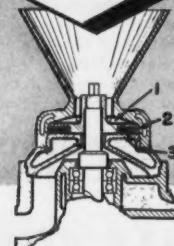
Description — Adjustable to blades 1/4" to 1 1/2" wide. Positive adjustment of mounting arm on supporting bracket is provided by a set screw that exerts pressure against a 90° pin that in turn presses against the adjusting screw. This eliminates any tendency to loosening or creeping. A special 10" socket wrench is provided for the set screw and adjusting screw to move the grooved wheel in and out for various width saws. Minor adjustments may be made with a No. 4 wrench, while saw is running. Two other models of the same design are available for the smaller sized saws. Illustration shows: 1 — Mounting arm adjustable upon supporting bracket; 2 — set screw for mounting arm; 3 — 90° pin for locking adjusting and set screws; 4 — 10" socket wrench for adjusting screw; 5 — adjusting screw for mounting arm; 6 — side guide wheels; 7 — grooved back wheel; 8 — metal safety guard. Additional information available on request.

BOYER-CAMPBELL CO., Dept. CP,
6540 St. Antoine St., Detroit 2, Mich.

When inquiring specify CP A3342
— see information request blank, pgs. 2-3

BARTLETT-SNOW *Triple Action* COLLOID MILLS

Featuring this exclusive
*Triple
PROCESSING
Action*



1) FIRST PROCESSING ACTION — Mixing in the Upper Chamber by Impeller Vanes on Top of the Rapidly Revolving Rotor.

2) SECOND PROCESSING ACTION — Between the Housing and the Periphery of the Rotor.

3) THIRD PROCESSING ACTION — Driven Against Centrifugal Force between the Rotor and Stator into Smaller and Smaller Areas.

..... Now furnished with an *Improved* Direct Reading Gap Adjustment

• First and only colloid mill to give users the advantage of triple processing action, these new, improved models are fitted with a hand wheel that raises and lowers the stator, decreasing or increasing the size of the stator-rotor gap. An indicating arrow and calibrated scale give quick, direct and accurate reading of the size of the gap opening in 1/1000 of an inch. The adjustment is self locking, and can be changed, if desired, even while the mill is in operation. A new method of stator support, eliminating the use of threads, keeps the stator and rotor always parallel, assuring the production of more uniform and more exact practical sizes. Furnished in 4 production and 1 laboratory size. Sample runs made gladly on request, write,—

THE C.O. BARTLETT-SNOW CO.

6270 HARVARD AVENUE • CLEVELAND 5, OHIO

ENGINEERING AND SALES REPRESENTATIVES IN THE PRINCIPAL CITIES

DRYERS, COOLERS, KILNS, CALCINERS AND PRESSURE VESSELS • CONVEYING AND ELEVATING EQUIPMENT
OF ALL KINDS • COLLOID MILLS • BOILER PLANT COAL HANDLING, STORAGE AND RECLAMING SYSTEMS
CRUSHERS, PULVERIZERS, SCREENS AND FEEDERS • POWER TRANSMISSION EQUIPMENT

When inquiring specify CP A3343 — see information request blank, pgs. 2-3

Why

Chemical Plants Choose ARMSTRONG TRAPS

Side-inlet,
side-outlet traps
draining bakelite
presses in
large chemical
plants.

Armstrong inverted bucket steam traps are favorites in chemical plants because they won't leak steam under any load conditions and because they discharge condensate and eliminate air as fast as they accumulate. Maintenance requirements are low, and operation is automatic and dependable, even with ordinary amounts of dirt and foreign matter.

For complete Armstrong data and valuable trapping hints, send for copy of the Armstrong Steam Trap Book, free on request.

ARMSTRONG MACHINE WORKS
850 Maple Street, Three Rivers, Michigan



ARMSTRONG STEAM TRAPS for Power—Process—Heating

When inquiring specify CP A3344 — see information request blank, pgs. 2-3

CUT THE COST OF FILLING!

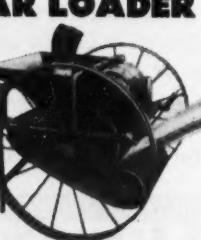


with an S-A BOX CAR LOADER

Load and trim box cars at a fraction of the cost of manual trimming . . . Save time and money!

One man, with part time attention to the S-A Loader, can handle up to 100 tons an hour—of any loose granular or small lump material up to 2" lump size.

Exposure of operator to dust is reduced to a minimum. Centrifugal action whirls material in a directed stream to any spot in the car.



Write for Bulletin No. 240
with complete details.

STEPHENS-ADAMSON
MFG. CO.

TELEVLEVEL—Bin Level Controls
Car Loaders
Variable Speed Reducers

SealMaster Ball Bearings
Winches
Saco Speed Reducers

11 RIDGEWAY AVE., AURORA, ILL.

When inquiring specify CP A3345 — see information request blank, pgs. 2-3

Page 102

PRODUCTION

Light Weight Gravity Conveyors in Easily Handled 10 Ft. Standard Length Sections

A new illustrated catalog on gravity conveyors contains information concerning construction features and uses of the 8 Rapid-Wheel Conveyor models available, together with complete specifications and data on standard accessories manufactured for use with the conveyors. The catalog also shows on-the-spot photos of "rapid-wheel" Gravity Conveyors in action on all types of conveying jobs. Operating with the smooth gravity principle, rapid-wheel conveyors speed and ease the handling of goods wherever the need arises. Portable and lightweight, they may be set up or dismantled in a matter of minutes. They are manufactured in standard 5-foot and 10-foot lengths and in widths of 12" and 18". Other lengths are manufactured upon request. A copy of the new catalog may be obtained on request.

RAPIDS-STANDARD CO., Dept. CP, Grand Rapids 2, Mich.

When inquiring specify CP A3346 — see information request blank, pgs. 2-3

Oven Furnaces — Gas, Oil, Electric, May be Used With Protective Atmospheres

Twelve page bulletin is devoted to detailed presentation of "Kleenmetal" oven furnaces, (gas, oil, electric) which may be used with protective atmospheres. These are designed to provide correct heating of steel and non-ferrous metals under conditions where the work requires protective atmospheres or absence of products of combustion or outside air to assure precise metallurgical quality and surface finish through controlled uniformity of heat treatment. (For



Ask Wakefield. This office had too few outlets—needed a rewiring job, tough because of concrete ceilings. Wakefield GRENADIERS gave the answer—put more light on desk tops and eye-comforting light on walls and ceilings, to cut office errors, reduce eyestrain. Existing outlets met the need because the Grenadier provides its own wiring way to carry feed wires. Your lighting problem may need different treatment but Wakefield has the answer! Write The F. W. Wakefield Brass Co., Vermilion, Ohio.



When inquiring specify CP A3348 — see information request blank, pgs. 2-3

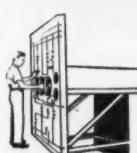
TIMERS



DESIGNED for INDUSTRIAL APPLICATIONS

- COMPLETE STANDARD LINE AVAILABLE
- SYSTEMS FOR SPECIAL REQUIREMENTS

Any number of related electrically-actuated operations may be simply and accurately controlled by ATC Timers for both sequence and duration. Circuits can be any number—from one to thousands—either consecutive or overlapping. Thousands of ATC Timers now installed on industrial machines and processes guarantee maximum production and uniformity by eliminating errors due to manual attention. Write for catalog data today.



25th YEAR OF INDUSTRIAL SERVICE

AUTOMATIC TEMPERATURE CONTROL CO., INC.

34 E. Logan St. • Philadelphia 44, Pa.

When inquiring specify CP A3349 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

When inquiring specify CP A3347 — see information request blank, pgs. 2-3

PRODUCTION

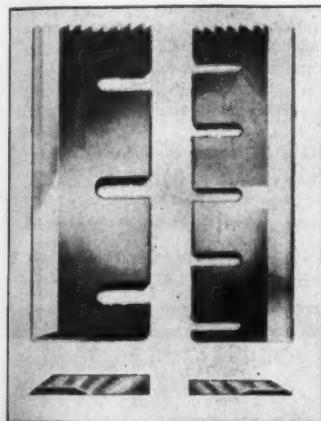
large scale treating with controlled protective atmosphere, furnaces are available in batch type or continuous belt, roller hearth or other conveyor types, with special preheat or cooling chambers, heat and protective atmosphere generating control equipment to meet specific requirements.) In the catalog referred to here muffle furnaces, with or without quench tank and direct heated furnaces with quench tanks or cooling chambers as desired are pictured and fully described. Copies of bulletin 417 on request.

W. S. ROCKWELL CO., Dept. CP, 50 Church St., New York 7, N. Y.

When inquiring specify CP A3350 — see information request blank, pgs. 2-3

Composite Tool Steel Improves Chipper and Similar Knives

Available in standard sizes in even inches from two to ten



New method provides better composite tool steel

designed to obtain the best properties of both metals. There are several methods of manufacturing composite sections, and where the components are high carbon and low carbon steels, the borax process has proved satisfactory as it does not involve any particular problem in securing a molecular union between the two components. The trend, however, has been toward a multiple alloy content in the tool steel portion, but as the alloy content in either or both of the components was increased, the problem of combining them was also increased. In the Jessop process, of which they have exclusive control, flat bar stock is formed by diffusion welding high speed steel to a backing steel of low alloy content. The tool steel portion of the composite bar stock extends from the edge of one flat surface to within $\frac{1}{4}$ " of the centerline and consists of approximately 40% of the total gauge. This method combines the hardness and edge holding properties of high speed steel in the tool, with the shock resistance of the low alloy steel. Also, the slots and holes in the back of the knives can easily be machined through the low alloy portion to the center of the bar. Jessop Type R is available in standard sizes in even inches from 2 to 10. In addition to greater performance, it offers economy in the production of composite knives. Further details will be furnished by the manufacturer.

JESSOP STEEL CO., Dept. CP, Washington, Pa.

When inquiring specify CP A3351 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

NEW TURCO STRIPPER REMOVES PAINT WITH COLD WATER RINSE!

Only Turco Paint-Gon Gives You This

Non-Inflammable, High-Speed Action

Proved on the toughest of war time jobs, this outstanding Turco paint stripper solves the difficult, time consuming, problem of removing paint through the miracle of Surface Chemistry.

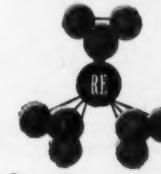
Turco Paint-Gon is applied by brushing, scrubbing or spraying—spreads easily and uniformly, clings well to vertical surfaces. It is swift in action, removes coatings in 5 to 20 minutes, so that they may be flushed away with water. It is free rinsing and leaves no gummy adhesive residue or film. It is non-inflammable (does not require the use of inflammable, volatile solvents).

Turco Paint-Gon is safe and non-corrosive to aluminum, magnesium, steel, cadmium, iron, zinc, or galvanizing.

Turco Paint-Gon is effective on all kinds of coatings *regardless of their condition*—paint enamel, baked enamel, varnish, lacquer, automotive synthetic enamel, etc.

Get the complete story on this amazing development. Phone or write your nearest Turco Field Representative.

*THIS IS TURCO SURFACE CHEMISTRY



© 1944 TURCO PRODUCTS, INC.
Surface Chemistry is the scientific balance and application of these cleaning factors to a specific problem.

WA—Wetting Action
EA—Emulsifying Action
SV—Saponifying Value
SA—Solvent Action
CA—Colloidal Activity
WC—Water Conditioning
BI—Buffer Index
pH—Energy of Alkalinity
TA—Total Alkalinity
RE—Research and Experience
The combining factor that puts all the above elements into balance and to work on your specific problem.



TURCO PRODUCTS INC., Box 2649, Los Angeles 54, Calif.
Please send information on the following:

- Turco Paint-Gon
- Materials for Rust & Corrosion Removal
- Turco Steam Cleaning Compounds
- Turco Cold Tank Cleaning Compounds
- Turco Hot Tank Cleaning Compounds

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

When inquiring specify CP A3352 . . . see information request blank, pgs. 2-3

Here's Why PROPELLAIR FANS MOVE MORE AIR

Direct-Connected
Type CB Fan



High-speed tip has least camber (curvature of working surface); least chord (width of airfoil section); least pitch (angle of attack).

Progressing toward hub, mid-sections have gradually increasing chord and pitch; gradually more camber.

Sections near hub which move at slowest speeds have greatest camber, highest pitch. Result: Uniform high air velocity over whole blade.

BOTH Sides of these Blades WORK and over their Full Length!

Like modern aircraft wings, both surfaces of Propellair airfoil-section fan blades produce air movement. Suction created at the back accounts for about sixty per cent, thrust from the front for about forty per cent, and by the scientific variation of camber, chord, and pitch Propellair engineers have perfected a blade which develops high, uniform velocity over the whole fan area.

Non-overloading Propellair axial-flow fans deliver maximum volume, require minimum torque, are easy to install, take little space... save money at every turn. Types and sizes for every industrial service. Ask us today for Catalog No. 10-CP.

PROPELLAIR
INC.
Moving Air Is Our Business

SPRINGFIELD • OHIO

When inquiring specify CP A3353 — see information request blank, pgs. 2-3

Page 104

PRODUCTION

Oil Burning System for Combustion Over A Range in Capacity As Great As 50-1

Bulletin — 4 pages — describes wide range (constant differential) oil burning system. It explains how the system achieves efficient combustion over a range in capacity as great as 50-1, controlling any number of this maker's especially designed burners throughout all variations in capacity. Components of system consist of burner comprising burner, atomizer, air register, burner throat and constant differential apparatus which may be valve or pump. Copies of bulletin 109 on request.

PEABODY ENG'G. CO., Dept. CP, 580-5th Ave., New York 19, N. Y.

When inquiring specify CP A3354 — see information request blank, pgs. 2-3

Centrifugal Pumps Include 1 1/2"-4" Electric Units; Also Aluminum Models

Portable, self-powered and self-priming centrifugal pumps are offered in a variety of types and models in fifty-page catalog. Many of these, although primarily designed for construction, marine and river service are so versatile that they lend themselves to other applications. The selection includes 1 1/2" — 4" electric pumps that may be used in elevator pits, underpasses, sump holes, core pumping in ice plants, gravel washing, oil field services. Also light weight 2" and 3" aluminum pumps that pump anything from a few buckets of seepage to 12,000 gph. Another serviceable pump is a bantam 1 1/2" model — 3000 gph.

THE JAEGER MACHINE CO., Dept. CP, Columbus 16, Ohio.

When inquiring specify CP A3355 — see information request blank, pgs. 2-3

STOP CONDENSATION DRIP - PREVENT CORROSION



Try this
tested
plastic
cork
coating

INDUSTRIAL
NoDrip

A SURE CURE — NoDrip, used and endorsed by leading industrial firms, forms a permanent, seamless jacket around pipes, tanks, vats, etc.; shuts out heat, cold, air, moisture; stops condensation dripping; prevents corrosion and rust. Acid, alkali and brine resistant. NoDrip protects and prolongs life of equipment, reduces costly maintenance and replacements. A trial in your plant will prove its merit. 1, 5 and 55 gal. drums. Order from your Supply House.

EASY APPLICATION

Applied like plaster with brush, trowel or spray. Adheres to metal, cement, brick, wood.

NoDrip Handbook on Request

J.W. MORTELL CO.
Technical Coatings Since 1895
530 Burch St. Kankakee, Ill.

When inquiring specify CP A3357 — see information request blank, pgs. 2-3

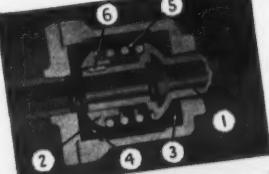
WHEN BETTER METALS ARE MADE — GROEN WILL USE THEM



The Johnson Rotary Pressure Joint is far more than just a packless stuffing box. It represents an entirely new method of admitting steam or liquids under pressure into rotating rolls or drums.

So many applications have been found for the Johnson Joint — from cold strip steel mills to machine tools — it may well hold the answer to one of your problems. It's packless, self-oiling, self-adjusting, and self-aligning design insures highest efficiency, and practically eliminates maintenance.

Available in a wide range of styles and sizes. Our Engineering Department will be pleased to work with you.



The Johnson Corporation

826 WOOD STREET



THREE RIVERS, MICH.

When inquiring specify CP A3356 — see information request blank, pgs. 2-3

CHEMICAL PLANTS' FAVORITE KETTLE

When it comes to a question of Tilting Type kettles, here's the one you'll find in large and small Chemical Plants throughout the country. They like the way this Stainless Steel Steam Jacketed Kettle works. They like its easy yet controlled and dependable tilting mechanism. Yes, and they like its quick-heating features; its non-scorching performance; its non-corrosive, pit-proof qualities. So will you. Write us without obligation for details and prices. GROEN MFG. CO., 4535 W. ARMITAGE AVE., CHICAGO 39, ILL.

GROEN

WORLD'S LARGEST PRODUCERS OF
STAINLESS STEEL STEAM JACKETED KETTLES

When inquiring specify CP A3358 — see information request blank, pgs. 2-3

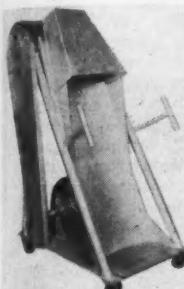
CHEMICAL PREVIEW

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PRODUCTION

Dumper for Bags up to 350 lbs.

Operates with $\frac{1}{4}$ HP electric motor; chute will handle bag 24" wide; easily adjusted



Bag dumper with adjustable chute

downward return of chute is obstructed. Upward lift takes ten seconds with eight seconds to lower.

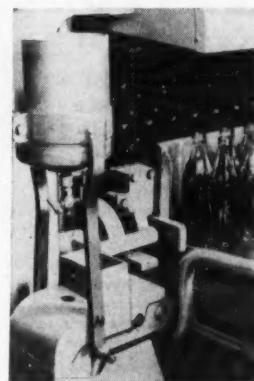
Description — An adjustable height chute at the front fits narrow openings and funnels the bags' contents into a vat or machine without spilling. Two spikes catch and hold bag while dumping. The chute will handle a bag 24 inches wide.

ASCO MFG. CO., Dept. CP, 601 So. Anderson St., Los Angeles, Cal.

When inquiring specify CP A3359 — see information request blank, pgs. 2-3

Lubricant For High Speed Chain Bottling Conveyors

Non-corrosive; contains no oil; dispensed thru any simple container with petcock and needle valve



Uses — This new lubricant has been especially developed for high speed conveyors.

Features — Non-staining, soapless, non-corrosive and contains no oil. Great wetting action.

Description — It has been common practice to use soaps but numerous operators have found that this material has very frequently caused corrosion and often resulted in shut-downs. This has been particularly encountered in the types of high-speed, pre-mix bottling units where all chains are returned to the same gear box. This recently perfected lubricant named "Botlube" provides coverage of a large area with a thin but exceptionally durable film with a very small amount of the product — just a drop or two. Thus, there is no overflow, no spillage or unsanitary soap pools on the floor. Any of the lubricant that may adhere to the bottom of bottles or cans will not stain surfaces. The lubricant is dispensed through any simple container with a petcock and needle valve.

TURCO PRODUCTS CO., Dept. CP, P. O. Box 2649, Terminal Annex, Los Angeles, Cal.

When inquiring specify CP A3360 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

GENERAL  ELECTRIC

ANNOUNCES

A 12-PART TALKING SLIDEFILM COURSE in INDUSTRIAL ELECTRONICS



VISUALIZED

for easy understanding, even by non-technical people

PACKAGED

for easy instruction, using your own "home-talent" leaders

PRACTICAL

up-to-the-minute subject matter, technically authentic

Now, an understanding of electronics as applied in industry can be built up, right within your organization, using the ingenious new techniques of *visual instruction* that have proved so successful for wartime training. Every sequence of this 12-part course has been put to test on groups of widely different education levels. Educators have joined practical plant executives in praising its combination of *easy understanding* and *technical accuracy*.

As you follow the instruction manual, the sessions almost "conduct themselves," so that no great experience in organizing or instructing people is necessary. Everything essential is furnished except a sound slidefilm projector (35 mm, 33 1/2 rpm), screen, and a meeting place. Upon completion of the course, your people will have a well-rounded acquaintance with electronic devices, tubes, circuits, and applications.

ALL THESE WILL BENEFIT

PLANT ELECTRICIANS and maintenance men will find the course understandable, even if their knowledge of electrical theory is limited.

PLANT AND DESIGNING ENGINEERS will find it stimulating in suggesting electronic applications to improve products or processes.

SALES MEN selling electronic products will be better equipped to talk to their customers.

EXECUTIVE MANAGEMENT and purchasing agents will be in a better position to consider and approve recommendations involving electronic equipment.

PRODUCTION MANAGERS and foremen will get a clearer concept of the workings of equipment for which they are responsible.

THESE ARE THE 12 SUBJECTS OF INDIVIDUAL FILMS AND LESSON BOOKS

1. Harnessing the Electron	5. Fundamentals of Electricity, Part II	9. Electronic Control of A-c Power
2. Electronic Tubes as Rectifiers	6. Electronic Relay Systems	10. Electronic Frequency Changing
3. Grid Control of Electronic Tubes	7. Electronic Rectifier Equipment	11. Photoelectric Systems
4. Fundamentals of Electricity, Part I	8. Thy-mo-trol (Thyatron Motor Control)	12. Electronics, Today and Tomorrow

GENERAL  ELECTRIC

Buy all the BONDS you can — and keep all you buy

HERE'S WHAT YOU GET

12 Slidefilms and Recorded Talks — each about $\frac{1}{2}$ hour long

300 Review Booklets — 35 sets of 12 individual lessons, keyed to the slidefilms

1 Instructor's Manual — a 140-page book with hundreds of illustrations and detailed steps for conducting the course

1 Carrying Case — attractive and strongly built, it holds records, films, and manuals

The Price — for the complete "package" as above, \$100; extra manuals, \$3; extra sets of 12 review booklets, \$2.

Orders — can be placed through any local G-E office, or use the coupon below. (Course may be returned without charge if you are not fully satisfied.)

GENERAL ELECTRIC COMPANY
Apparatus Dept., Section M685-14
Schenectady 5, N. Y.

Enclosed is our order for complete INDUSTRIAL ELECTRONICS courses at \$100 each.
 When could someone in our organization examine the complete kit?

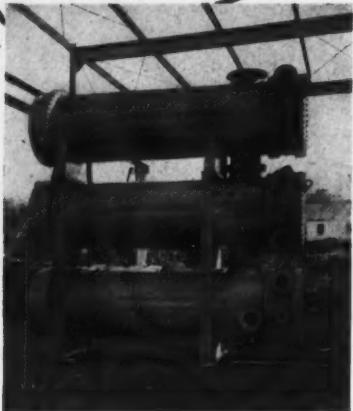
Name
Company
Address
.....

When inquiring specify CP A3361 . . . see information request blank, pgs. 2-3

PATTERSON-KELLEY
Heat Exchangers
and
Process Equipment

SKILLED
SKILLED

In the design of process equipment
involving the transfer of heat
from all the commercially used metals



★ Heat Exchangers	★★ Carbon Steel
★ Kettles	★★ Stainless Steel
★ Autoclaves	★★ Copper
★ Storage Heaters	★★ Aluminum
★ Coolers	★★ Copper-Silicon Alloy
★ Condensers	★★ Stainless Clad
★ Oil Heaters	★★ Nickel Clad
★ Mixers	★★ Bronze

AND HERE ARE

Two Suggestions:

- 1 . . . let us help design the equipment you need
- 2 . . . if it is already designed, let us quote on the manufacture

Our engineers are qualified to design and our shopmen to manufacture to meet any code . . .
ASME, ASME-API Paragraphs U68 or U69.



PATTERSON-KELLEY
Company, Inc.

EAST STROUDSBURG, PA.

BOSTON 16, 96-A Huntington Avenue • NEW YORK 17, 101 Park Avenue
PHILADELPHIA 3, 1700 Walnut Street • CHICAGO 4, Railway Exchange Building
Representatives in All Principal Cities 11-PK-3

When inquiring specify CP A3362 — see information request blank, pgs. 2-3

Page 106

PRODUCTION

Constant Speed D.C. Motor Gives A.C. Advantages With Batteries or D.C. Line

Small enough to be held in the palm of the hand, a new Constant Speed D.C. Motor has been developed to supply A.C. motor performance to the D.C. market. The new motor is especially adaptable to synchronous operation formerly possible only through the use of A.C. current and literature describing it is available.

It is simple in design and ruggedly constructed for land, aircraft, or marine use. According to test under actual working conditions, the Amglo Constant Speed D.C. Motor maintains a constant set speed regardless of wide variations in voltage. It is self-starting and builds up full speed almost instantly. Current consumption is extremely low (from .06 to 1 watt), and shaft speeds may be geared from 1 revolution every 24 hours up to 600 r.p.m. It provides the same "time keeping" accuracy with Direct current that A.C. motors give with alternating current.

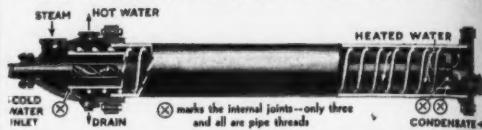
Designed to fill a long-felt need, the motor finds use in such fields as *time delay controls*, traffic signals, battery operated clocks, *recording instruments*, and other devices where extreme synchronous accuracy is required. This not only opens entirely new fields for direct current with present day types of dry and storage batteries, but presents even greater possibilities with the many new developments soon to appear in the market. It also provides an auxiliary motor where batteries are used as "stand by" emergency equipment.

Because of its simplicity of design, the motor known as the "Amglo" Constant Speed D.C. Motor has been made avail-

HOT WATER on the double!

One operating man put it this way: "If you want hot water fast, you want the Johnson Instant Heater." Its simple design permits a more rugged construction which eliminates any need for reducing valves. You heat water with full steam pressure—more quickly, more efficiently, more economically. Today you can get all the advantages of this Johnson design at even lower cost, in the new all-steel heater. For use in process work, the copper tube heater can still be furnished.

Complete range of sizes and capacities. Write for bulletin



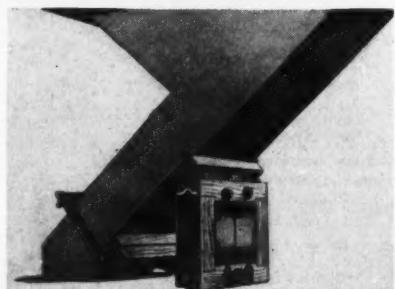
FOR: Instantaneous water heating • Storage tank heating • Feed water preheating • Booster service • Process liquid heating • Source of hot water for space heating.

THE JOHNSON CORPORATION
826 Wood St., Three Rivers, Michigan

JOHNSON *Instant* HEATER

When inquiring specify CP A3364 — see information request blank, pgs. 2-3

SPROUT-WALDRON *Lifetime* NON-ELECTRIC MAGNETIC SEPARATOR



Save your grinders and other reduction machines and lessen fire hazards by installing this amazingly powerful metal catcher that removes metal from free-flowing materials. Easy to install in wood or metal spouts, requires no wiring, no maintenance cost, and lasts a lifetime. Inexpensive.

Made in sizes from 4" to 24".
Write for bulletin No. F-1144.

SPROUT-WALDRON COMPANY
Manufacturing Engineers Since 1866

When inquiring specify CP A3363 — see information request blank, pgs. 2-3

a Leader

GAYCO Centrifugal Air Separator

The features embodied in the new model GAYCO Centrifugal Air Separator make them a leading means of increasing the capacity and efficiency of all types of grinding mills. They have quick, positive adjustment. When once adjusted they are not affected by variation in speed or rate of feed.

They require very little power to operate. And they feature the exclusive GAYCO principle of rejecting coarse particles by means of a centrifugal sizing fan. They separate 99% through 325 mesh, and give 35% to 30% greater recovery of fines.



The Gayco Separator Handles

SUCH PRODUCTS AS

BAGASSE GROUND HAIR
CASEIN GROUND OATS
COCOA POWDER GUM ARABIC
COTTONSEED SOY FLOUR
MEAL SPICES
FERTILIZER SUGAR

Universal Road Machinery Co.

RUBERT M. GAY DIVISION, 117 Liberty St., New York 6, N.Y.
Canadian Representative: F. H. Hopkins & Co., Ltd., Montreal
FACTORY & LABORATORY, KINGSTON, N.Y.

When inquiring specify CP A3365 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

PRODUCTION

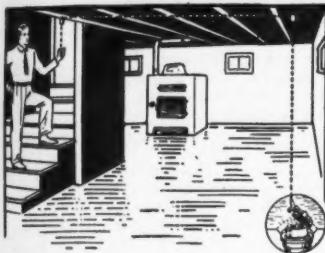
able for use at 1½, 3, 6, 12, 24, 32 or 110 volts. Constant speed is maintained even in the case of storage battery operation where the voltage is higher when the battery is being charged. Description and complete literature covering this new constant speed D.C. motor on request.

AMGLO CORP., Dept. CP, 4234 Lincoln Ave., Chicago, Ill.

When inquiring specify CP A3366 — see information request blank, pgs. 2-3

Remote Control Flood Valve

Drains flooded cellars; operated by pulling chain leading from valve latch



Uses — For draining flooded cellars due to severe storms, overflowing streams, blocked sewers, burst water mains, sprinkler systems opened because of fire or accidental operation.

Valve drains cellars; also prevents back-flow of sewage and sewer gas.

Features — Eliminates the trouble-some job of reaching and removing trap plug or cap in the sewer line when it is under water or the tedious operation of pumping the water out.

Description — By means of the flood valve, illustrated here, it is necessary only to pull a wire or chain leading from the latch on the valve to stairs or other convenient location. The valve cap springs open instantly and the water drains out through a 3½" diameter into the sewer. After the water has subsided, the cap is closed and re-latched by a slight pressure of the foot. This valve offers a convenient means of access to the sewer line for cleaning, as opening provides easy entrance for the cleaning coil or rod when valve cap is lifted. The valve body, lever, and latch are bronze castings. Pins, cotters and springs are brass. There are no cast iron or steel parts to rust or corrode and there is nothing to get out of order or require servicing. The valve is made in one size only to fit into the hub of any standard 4" or extra heavy cast iron soil pipe or vitrified clay sewer pipe fitting. Bulletin 445 on request.

W. H. NICHOLSON & CO., Dept. CP, 12 Oregon St., Wilkes-Barre, Pa.

When inquiring specify CP A3367 — see information request blank, pgs. 2-3

Photocopying Equipment — 22" and 42" Models; Electric Dryers and Accessories

Eighteen-page catalog on photocopy equipment offers practical information of use to those concerned with reproduction of letters, statistics, plans, drawings, catalog sheets, specifications, orders and other material and records. This equipment copies anything written, printed, types, drawn or photographed. The "Photocopyer" is easy to use and complete copies in a few minutes, proper procedure permitting making copies at rate of one per minute with ease. In addition to this 22" unit a 42" model is available as well as electric dryers. Copies of catalog and also folder on large unit on request.

AMERICAN PHOTOCOPY EQUIPMENT CO., Dept. CP, 2849 N. Clark St., Chicago 14, Ill.

When inquiring specify CP A3368 — see information request blank, pgs. 2-3

BY employing a unique method of condensing water utilization, the SK Hydro-Steam Vacuum Unit requires but a small amount of make-up water to maintain vacua in ranges up to 1 mm absolute.

The unit illustrated consists of two-stage steam jets and a one-stage water jet exhauster. The steam jet exhausters operate in series and discharge into a water jet exhauster which serves both as a condenser for the actuating steam and as the low vacuum stage jet. This exhauster discharges into a specially designed chamber where the non-condensable gases are liberated. The water is re-circulated through the water jet exhauster by means of a small centrifugal pump which is an integral part of the unit. To maintain the required vacuum a small amount of make-up water is continuously added. These units are available as a water jet vac pump or with 1, 2 or 3 stages of steam jet boosters. Auxiliary equipment such as separators, strainers, pressure regulating valves and superheaters may be included if required. No barometric leg is necessary.

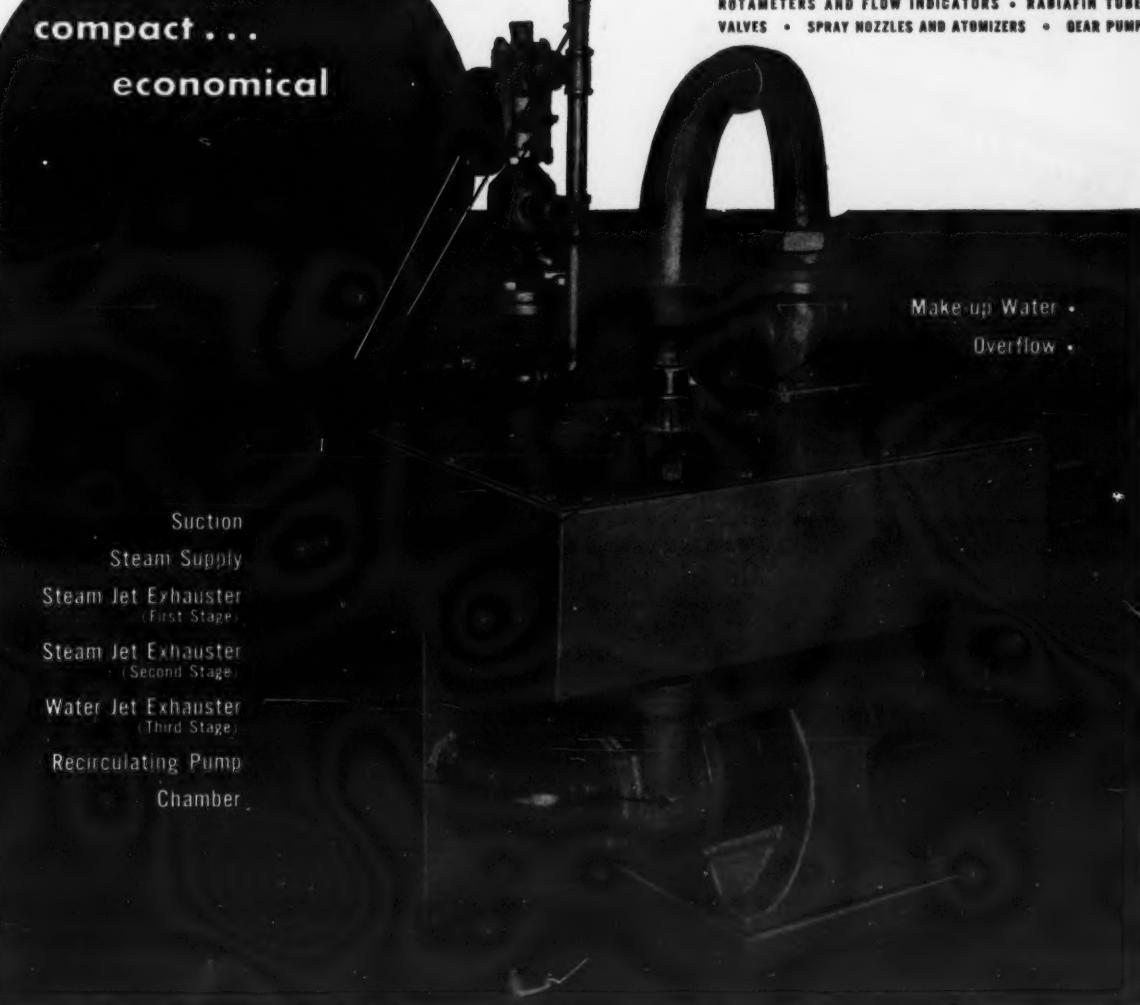
Readily installed, easily operated and requiring practically no maintenance, the compact SK Hydro-Steam Vacuum Unit produces a high vacuum quickly and economically. It is made in six sizes to handle various quantities of gases. Write today for full details.

SCHUTTE & KOERTING CO. *Manufacturing Engineers*

1173 Thompson St., Philadelphia 22, Pa.

JET APPARATUS • HEAT TRANSFER EQUIPMENT • STRAINERS
CONDENSERS AND VACUUM PUMPS • OIL BURNING EQUIPMENT
ROTAMETERS AND FLOW INDICATORS • RABIAFIN TUBES
VALVES • SPRAY NOZZLES AND ATOMIZERS • GEAR PUMPS

new...
compact...
economical



When inquiring specify CP A3369 . . . see information request blank, pgs. 2-3

WHY THEY BUILT ME WITH ROUND CORNERS

Advantages For Your
Stainless Steel Equipment
Revealed



The techniques of fabricating equipment with round corners for efficient service were developed to a high degree in our plant. We use special machinery for this job, as we do for many phases of stainless steel fabrication.

FOR BETTER STAINLESS STEEL EQUIPMENT,
CONSULT WITH US.

S. BICKMAN, INC. 711 GREGORY AVE., WEEHAWKEN, N.J.



When inquiring specify CP A3370 — see information request blank, pgs. 2-3

Page 108

PRODUCTION

Portable Power Conveyor Units

Sections in three widths; three sizes form systems to any length; controlled by push buttons at unloading end

Uses — To provide a highly flexible, easily assembled portable conveyor system. These small powered units couple together to form conveyor line of length desired with sets of differential rolls available for use where it is necessary to have two connected units joined at an angle.

Features — Entire assembly or system can be instantaneously controlled from the unloading end by pushbutton control. System can be shortened or expanded without special wiring. No guides required and units may be combined to provide for up or down grade.

Description — Units furnished in 3', 5', 10' lengths; belts of these units in three widths: 12", 16", 20". Individual units driven by maker's own "Power-Pac". Each section can carry a distributed load of 400 pounds.

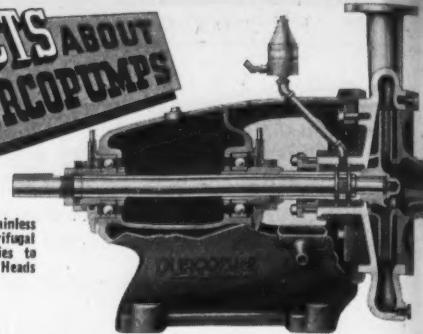
ISLAND EQUIPMENT CO., Dept. CP, 101 Park Ave., New York 17, N. Y.

When inquiring specify CP A3371 — see information request blank, pgs. 2-3

Presses for Extrusion of Tubular Products to Dimensions Within Close Tolerances

Four page bulletin emphasizes pictorial presentation of large extrusion presses. These presses are designed for the efficient extrusion of tubular products, rods, bars and all types of sections, strip and wire rods. They provide effi-

FACTS ABOUT DURCOPUMPS



Model 40 Stainless Steel Centrifugal Pump. Capacities to 2000 g.p.m. Heads to 230 ft.

Streamlined Durcopumps are built in Durimet, Durco KA2S, Durco KA2SMo, and other Stainless Steels, Ni-Rosist, Nickel Cast Iron and Monel. With interchangeable base, all wet end parts are readily converted to Duriron or Durichlor.

BASE — streamlined, ball bearings completely enclosed. Radial and thrust bearings.

VOLUTE — single unit integral with stuffing box and with flanged discharge connection.

STUFFING BOX — oversize to accommodate corrosion-resisting packing and lantern gland.

IMPELLER — open or closed design. Impeller, shaft and shroud, all acid-resisting, with each part renewable and interchangeable. Flanged suction connection integral to cover.

BEARING ASSEMBLY — double locking device permits oversize bearings, removal of impeller assembly without disturbing bearings, micro-adjustment of impeller promoting maximum pumping efficiency.

Send for Bulletins 811-C and 810-D

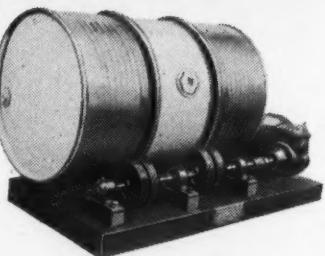
THE DURIORON COMPANY, Inc.
DAYTON 1, OHIO, U.S.A.

When inquiring specify CP A3373 — see information request blank, pgs. 2-3

Adjustable DRUM ROLLERS

MIX IN SUPPLIERS' DRUMS

- Quick
- Effective
- Economical



DRUM ROLLERS

"U. S." drum rollers are made in sizes to accommodate 1, 2, 3, or 4 standard 55-gal. drums. Easily adjusted to fit any other size barrel or drum. Standard revolving speed 144 RPM. Special machines can be made to order with any specified desired RPM.

Write for catalog pages 112-113

Now 40% GREATER
DISCHARGE
CAPACITY

IDEAL Rechargeable Flashlight STORAGE BATTERY

NOW IMPROVED!

This increased discharge capacity means:—MUCH BRIGHTER, LONGER SUSTAINED LIGHT—smaller voltage drop assuring TOP LEVEL LIGHT VOLUME—Even greater flashlight satisfaction than already experienced by MANY THOUSANDS OF USERS—CAN OUTLAST 400 or more DRY CELLS—SAVES up to \$10 on each flashlight. Fits standard flashlight case using 2 or more 1½" size D dry cells.

GUARANTEED!

IDEAL Battery Chargers in single, 6-gang and 12-gang types, plug into any light socket. Also rechargeable from automobile ignition line.

PROMPT Write for
DELIVERY Bulletin BB 345



IDEAL Sycamore

Storage Battery Division

IDEAL COMMUTATOR DRESSER CO.

5137 Park Ave., Sycamore, Ill.

Sales offices in all principal cities

In Canada: Irving Smith Ltd., Montreal, Quebec

When inquiring specify CP A3374 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

U. S. STONEWARE
Process Equipment Division
AKRON 9, OHIO

When inquiring specify CP A3372 — see information request blank, pgs. 2-3

PRODUCTION

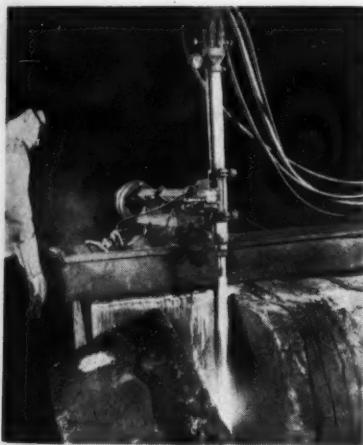
cient equipment for shaping non-ferrous metals to dimensions within close tolerances. Their advanced design embodies arrangement of containers and tools enabling the manufacture of a wide range of sizes from one unit at low operating cost. Special developments for temperature control of the container in addition to balanced operating valves insure maintenance of the most favorable extrusion conditions for each particular alloy for the entire stroke. The presses pictured include a 2500 ton press; another 2500 ton model with new type cylinder construction; a 4000 ton press shown in operation extruding aluminum alloy. Copies of bulletin on Schloemann presses on request.

SCHLOEMANN ENGINEERING CORP., Dept. CP, Empire Bldg., Pittsburgh, Pa.

When inquiring specify CP A3375 — see information request blank, pgs. 2-3

Machine Cutting Blowpipe for Steel 16 to 50 Inches Thick

For hot top cutting, ingot slitting, large forgings and scrap cutting



Cutting chrome-nickel-molybdenum hot top to charging box size

blowpipe is water cooled and is intended to be mounted on a heavy-duty straight line cutting machine such as the maker's new "Oxweld" CM-37 machine or the familiar "Oxweld" CM-21 cutting machine. A 50 lb. gauge is attached to the blowpipe body for checking cutting-oxygen pressures which are unusually low, never over 25 psi. The C-45 blowpipe is designed for operating with medium pressure acetylene and will operate satisfactorily on a generator or a manifold having a minimum hourly capacity of 500 cu. ft. of acetylene. Unless cutting oxygen is supplied from a pipeline, at least 10 cylinders should be manifolded to provide sufficient capacity. In shops where steel over 18 inches thick must be cut frequently, the C-45 blowpipe provides a tool for making these cuts quickly and economically. Also available is the "Oxweld" C-45 blowpipe holder, which has been designed especially for this blowpipe. With it vertical and angular adjustments are easy.

LINDE AIR PRODUCTS CO., (Unit of Union Carbide & Carbon Corp.) Dept. CP, E. 42nd St., New York, N. Y.

When inquiring specify CP A3376 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

AVAILABLE NOW!

NORTHROP GAINES

Airlight

WHEELS

Airlight

the only aluminum alloy high capacity wheels

CARRY HEAVIER LOADS • Heat generated by friction limits working capacity of all rubber-tired wheels. Rubber stay coolers on Airlight wheels, has a higher load-carrying capacity because the aluminum alloy hub dissipates heat 5 times faster than ordinary steel hubs. That's why an Airlight 12 x 3 wheel has a load rating of 1500 pounds.

SAVE YOU MONEY • Airlight wheels cut lubrication, maintenance, and replacement expense. Factory-packed Timken tapered roller bearings are built into the wheels so that grease cannot escape, even in temperatures ranging from subzero to more than 200° F. Experience has shown these wheels operate the equivalent of ten thousand miles without addition of grease.

NOISELESS AND CLEAN • Airlight wheels are ideal wherever quiet or cleanliness is important. With or without load, they operate practically without sound. Their aluminum alloy construction resists corrosion. In addition, the bright machine finish of the wheels improves the appearance of any vehicle. In plants handling food or beverages, in laundries and laboratories, in hospitals or other institutions—rustless, noiseless, light weight Airlight wheels add smooth efficiency to any hand- or power-drawn vehicle.

Write today for complete details on these modern, versatile wheels. No obligation.

NORTHROP GAINES, INC.
Dept. CP-11

NORTHROP GAINES, INC.

1985 EAST 16TH STREET • LOS ANGELES 21, CALIFORNIA

Phone: Prospect 7766

Airlight

HAND TRUCKS

Airlight hand trucks are easy to handle. They're light weight yet virtually unbreakable because of their aluminum alloy construction. Details available at your request.



When inquiring specify CP A3377 . . . see information request blank, pgs. 2-3

Page 109

**LOOK INTO
GAST ROTARY
AIR MOTORS**

ALWAYS EFFICIENT. Automatic take-up for wear is a feature inherent in rotary design.

YOUR OWN investigations will satisfy you that in many explosion proof applications and others where compressed air is available, the Gast Rotary Air Motor offers many marked advantages. Write today for your copy of the new descriptive folder, "Industry's Trend to Air for Power."

VARIABLE SPEED easily controlled by varying air pressure.

NO SPARKS, therefore explosion-proof. Meets all safety requirements.

SIMPLE, trouble-free operation. No springs behind vanes, shaft packing does not require adjustment.

AVAILABLE. Low in cost, good delivery on essential industrial applications.

COMPACT. Unbelievable power in proportion to small size.

GAST AIR
ROTARY
MOTORS • COMPRESSORS
VACUUM PUMPS

GAST MFG. CORP., 101 HINKLEY STREET, BENTON HARBOR, MICHIGAN

When inquiring specify CP A3378 — see information request blank, pgs. 2-3

8th ADVANTAGE...

**NOT WET BY
MOLTEN
METAL!**



BAR OF WHAT?

Carbon, Graphite or "Karbate" materials, of course
Corrosion Resistant
No Contamination
High or Low Heat Transfer
Resistant to Thermal Shock
Easy to Fabricate
Electrical Conductivity
No Deformation at High Temperature
Not Wet by Molten Metal

IMAGINE! — 1500 steel ingots on graphite stool inserts in one plant — *without any stickers!* That's because molten metals simply do not stick to carbon or graphite!

This eighth advantage of "National" carbon or graphite is only one of many responsible for the adoption of these materials by the metal-working industries, in the form of stool inserts, mold plugs, molds, mold wash (graphite powder), run-out troughs,

and furnace linings. Another advantageous feature in run-out troughs and furnace linings: the carbon blocks are unaffected by the most corrosive slags.*

You are invited to get the full story... from our nearest Division Office... on carbon's, or graphite's, truly remarkable combination of properties, whether in the ordinary, porous, or impervious forms.

*Chemical Engineers Please Note

Of parallel importance to the chemical industries are other advantages of "National" carbon and graphite and "Karbate" impervious materials. They are resistant to the corrosive action of most acids, alkalies, and solvents, and they do not contaminate solutions.

The words "National" and "Karbate" are registered trade-marks of National Carbon Company, Inc.

NATIONAL CARBON COMPANY, INC. Unit of Union Carbide and Carbon Corporation

General Offices: 30 E. 42nd St., New York 17, N.Y.
Division Sales Offices: Atlanta, Chicago, Dallas, Kansas City, New York, Pittsburgh, San Francisco

When inquiring specify CP A3380 . . . see information request blank, pgs. 2-3

PRODUCTION

Flexible-Metal Hose for Tank Car Users

A new eight-page bulletin (No. 55-G) has just been released and it suggests many practical uses for flexible all-metal hose in handling tank car shipments of liquids and gases. It gives the reader helpful ideas that will prove valuable to producers, refiners, distributors and large users. The bulletin is not technical but it gives the basic information necessary for the proper application of flexible hose to supply lines, loading problems and supplementary steam connections.

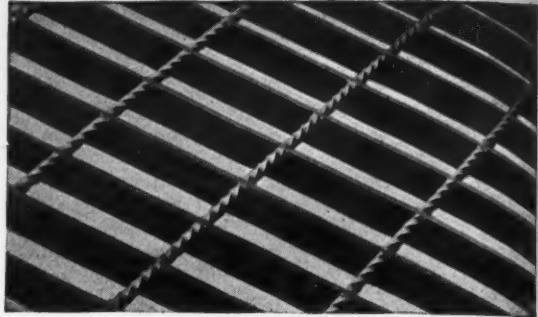
This new bulletin No. 55-G will be of interest to food processors and chemical manufacturers as well as oil companies. The company offers engineering service to manufacturers who are contemplating the installation of new equipment for handling light and heavy liquids and gases.

PENNSYLVANIA FLEXIBLE METALLIC TUBING CO., Dept. CP, 72nd & Powers Lane, Philadelphia 42, Pa.

When inquiring specify CP A3379 — see information request blank, pgs. 2-3

Heating-Cooling System for Process Vessels Has Steel Tubes Integrally Welded in Walls

A new development in autoclaves and process kettles is given practical, detailed presentation in four page illustrated bulletin. Known as the "Coil-o-clave", this equipment provides an advanced method of heating or cooling and embodies an unusually efficient, economical design and construction for a high rate of heat transfer. The main characteristics of this equipment is a series of steel tubes welded integrally with ample metal for heat transfer into the exterior walls of the vessel. All modern materials, in-



ONE PIECE

...ELECTROFORGED STEEL CONSTRUCTION

- ★ Easy to maintain—paint reaches entire surface.
- ★ Open to maximum area of light and air.
- ★ Self-cleaning—no sharp corners to clog with dirt.
- ★ Economical and easy to install.

BLAW-KNOX DIVISION of Blaw-Knox Company

2076 FARMERS BANK BLDG. • PITTSBURGH, PA.
NEW YORK CHICAGO PHILADELPHIA BIRMINGHAM WASHINGTON

BLAW-KNOX GRATING

When inquiring specify CP A3381 — see information request blank, pgs. 2-3

Specify
FARRIS
RELIEF
VALVES

and
you're
safe!



This FARRIS Diaphragm Relief Valve No. 1000, is now used on thousands of U. S. Naval and Merchant Marine vessels. No packing-gland — diaphragm sealed for back-pressure jobs. Now used extensively by refineries, power-stations, chemical and industrial plants on various operations requiring non-shock full-capacity relief at only 20% over-pressure and close regulation of operating pressure. Just one of the complete line of FARRIS Relief, Safety and Pop Valves. Write today for Bulletin.

FARRIS DIAPHRAGM RELIEF VALVE, Type 1000. All bronze construction, open spring, meets Navy Spec. 45V26. For water, oil, steam, air, pressures to 150 lb. Sizes $\frac{1}{2}$ " to 2". Globe construction also.

The FARRIS Diaphragm Relief Valve No. 1000 is now used on thousands of U. S. Naval and Merchant Marine vessels. No packing-gland — diaphragm sealed for back-pressure jobs. Now used extensively by refineries, power-stations, chemical and industrial plants on various operations requiring non-shock full-capacity relief at only 20% over-pressure and close regulation of operating pressure. Just one of the complete line of FARRIS Relief, Safety and Pop Valves. Write today for Bulletin.

Farris
SAFETY and RELIEF VALVES

FARRIS ENGINEERING CO. 358 Commercial Ave., Palisades Park, N. J.

When inquiring specify CP A3382 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

PRODUCTION

cluding nickel, Monel, stainless and clad steels can be used for the vessel walls at a reasonable cost. To enumerate advantages offered they are in part: (1) Clad walls if desired; (2) Steel tubes for high or low pressure steam or liquids; (3) Integral weld with low resistance to heat travel; ample metal area provided; (4) Large film area, the principle resistance is thru the film — ample area for a high rate of heat transfer; (5) High velocity thru the tubes reduces film thickness and results in high rate of heat transfer. (6) Coils can be arranged in parallel groups to give uniform temperature over entire area; (7) Light weight wall results in low heat storage and sensitive heat control. Copies of bulletin on "Coil-o-clave" on request.

UNION IRON WORKS, Dept. CP, Erie, Pa.

When inquiring specify CP A3383 — see information request blank, pgs. 2-3

Picking Table Magnet Removes Iron from Nuts, Candies, Seeds

For service where thickness of materials is not more than $\frac{3}{4}$ ", magnet easily cleaned by tipping and wiping magnetic surfaces

Uses — To remove tramp iron from nut meats, candies, beans, seeds and similar materials.

Features — Provides inexpensive protection; no electrical connections or maintenance problems. Accumulated metals are manually removed by tipping magnet and wiping clean the magnetic surfaces.

Description — Magnetic material is made of "Alnico". Magnetized assembly is adjustable in height above picking belt. Heavy end castings keep separator in place on table. Cover on magnetic section made of stainless steel. This model Number 228 is recommended for service where thickness of material is not more than $\frac{3}{4}$ inch. Separator removes iron dust and larger pieces such as pins, nails, belt pins, bolts, sheet metal scale, etc. (A larger model for material up to $1\frac{1}{4}$ in. thickness is also offered.) Shipping weight of Model 228 is 30 pounds. Literature on request.



Position of separator on picking table

THE BAUER BROS. CO., Dept. CP, 1719 Sheridan Ave., Springfield, Ohio.

When inquiring specify CP A3384 — see information request blank, pgs. 2-3

Power & Distribution Transformers

Comprehensive bulletin concisely lists and illustrates a varied line of electrical and automotive products. It contains section of distribution and power transformers; industrial brakes and brake controls and a fine selection of motors: single-phase and direct current; polyphase squirrel cage motors. Copies of bulletin — Number GU 86 on request.

WAGNER ELECTRIC CORP., Dept. CP, 6400 Plymouth Avenue, St. Louis, Mo.

When inquiring specify CP A3385 — see information request blank, pgs. 2-3

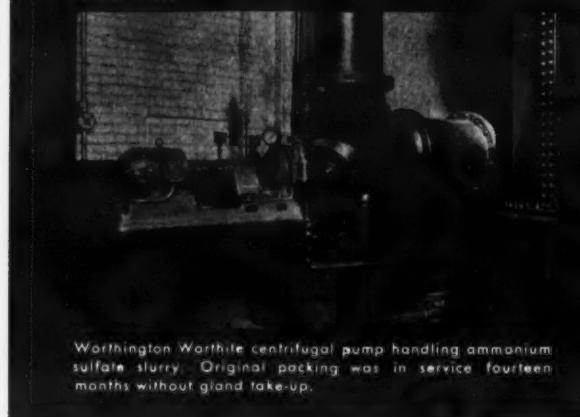
NOVEMBER-DECEMBER, 1945

HOW TO PUMP HOT BRINE SLURRIES

... with the least corrosion and abrasion



Worthington Worthite Centrifugal Pumps delivering 40-50% table salt slurry at 160 F. Max. Temp. from evaporators to Oliver filters.



Worthington Worthite centrifugal pump handling ammonium sulfate slurry. Original packing was in service fourteen months without gland take-up.

Worthington Type CG Worthite centrifugal pumps handling potash brine.



Worthington parts of Worthington centrifugal pump after handling table salt slurry for 27 months. Those sharp edges of the impeller, when checked by micrometer, showed no wear. Even impeller nuts escaped corrosion and abrasion. The packing was in service for 6 to 7 months.

Specify Worthington Worthite Centrifugal Pumps

It will pay you to investigate why Worthington Worthite Centrifugal Pumps are so successful in handling such abrasive and corrosive-abrasive brine slurries as sodium chloride, Glauber's salt, potash, ferrous sulfate, ammonium sulfate, and other slurries such as clay slip, emery and water for grinding glass, lime slurries, etc.

Look into Worthite . . . a complex alloy steel containing over 50% nickel, chromium, molybdenum, silicon, manganese and copper. Learn why such a relatively soft metal withstands severe abrasive and corrosive-abrasive conditions.

Bulletin W-350-B8 and Vol. 1, No. 3 issue of Worthite News give full technical data on the ability of Worthite to resist wear and corrosion in slurry handling.

Write for your copies today — and see why there's more worth in Worthington. Worthington Pump and Machinery Corporation, Harrison, N. J.

WORTHINGTON



24CB-4

THE
WORLD'S LARGEST
MANUFACTURER
OF PUMPS



Type CG and CGL
Sizes 1 $\frac{1}{2}$ to 3 $\frac{1}{2}$. Capacities to 525 GPM; heads to 95 ft. Liquid ends of WORTHITE alloy.



Type CF, Sizes 1 $\frac{1}{2}$ to 4 $\frac{1}{2}$. Capacities to 1000 GPM; heads to 130 ft. Standard, all iron and all bronze.



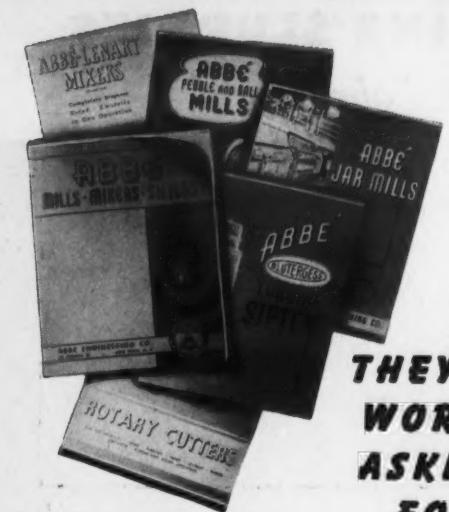
Type CQ, Sizes 1 $\frac{1}{2}$ to 3 $\frac{1}{2}$. Capacities to 600 GPM; heads to 130 ft. at 1750 RPM. Closed impeller. WORTHITE shaft and fittings.



Type L, Sizes 3" to 8". Capacities to 2250 GPM; heads to 300 ft. Single stage volute. For general service.

When inquiring specify CP A3386 . . . see information request blank, pgs. 2-3

Page 111



**THEY'RE
WORTH
ASKING
FOR**

If You Want to Improve

**PULVERIZING
WET OR DRY GRINDING**

Abbé Ball or Pebble Mills, batch type or continuous tube mill type, meet your every requirement in reducing materials to required mesh in any quantity in small or large scale production. Abbé Jar Mills or Jar Rolling Machines handle multiple small batches of same or different materials. They can also be used for compounding and dispersing.

**CUTTING • SHREDDING
GRANULATING**

Abbé Rotary Cutters reduce materials to as low as ".01" particle size. For chemicals, plastics, bark, cork, roots, paper, gums, spices, etc. High speed granulating with minimum of fines, quick screening and easy cleaning.

**MIXING • DISPERSING
EMULSIFYING**

Abbé-Lenart Mixers provide rapid, intensive dispersion of solids in liquids, producing more uniform material in minimum time. Built of any metal for operation at normal, high or low temperatures, pressure or vacuum.

SIFTING

Abbé-Blutergess Turbine Sifter for any dry material, any mesh, produces clean separation from 2 to 10 times faster than shaking or vibrating screens. Quiet, dust-proof, power and space saving.



ABBE ENGINEERING CO.
46 CHURCH ST. • NEW YORK 7, N. Y.

When inquiring specify CP A3387 — see information request blank, pgs. 2-3

PRODUCTION

**Production of Vitamin D by the
Irradiation of Sterols**

Annular quartz cell system with 1200 w. quartz mercury arc tube centrally located in cell

Uses — Used for the production of Vitamin D by irradiation of sterols. The multiple cell irradiator is reported to be an extremely efficient converter of pro-vitamin into Vitamin D, the general yield being about 40% of potential. In terms of ergosterol this would be about sixteen million units per gram.

Features — In order to avoid overheating of the arc, or overheating of the irradiation solution, the quartz cell system is so constructed that a water bath flows between the arc and the irradiation solution. This arrangement also is a precaution against explosions and fires which have occurred with some frequency where other designs have been employed.

Description — The equipment consists of an annular quartz cell system with a 1200 watt quartz mercury arc tube centrally located in the cell. Electrical controls are furnished for the proper operation of the arc tube. These consist of a reactive transformer, capacitor, running hour meter, and intensity control switch. This apparatus is contained in a metal housing and may be installed at any required point distant from the actual irradiation equipment. Frequently the above equipment is arranged in series with as many as six in a single bank. In a typical installation, quartz cell system is mounted on panel board and mercury arc installed in central opening. The quartz

NO BREAK-THRU

When you filter through stone!

LeVal Filters support filter-aid on rigid, porous stone. They have no cloths or pads to break through . . . or to sag and let cloudy filtrate pass. That is why LeVal Filters provide dependable clarification at all times.

LeVal Filters leave no messy cleaning job. Turning a couple of valves backwashes the filter — flushes filter cake to the sewer.

Above is a LeVal Portable Filter Station, complete with motor, pump, precoating tank, pipes, and valves. Other styles and models range from bottling strainers to large filter units, to serve every need of the process industries.

**WRITE FOR
BULLETIN F-103**

for complete information on the LeVal filtration principle.

WHITING CORPORATION

LEVAL FILTER DEPT. District Engineers in 26 principal cities
15667 Lathrop Ave., Harvey, Illinois

When inquiring specify CP A3388 — see information request blank, pgs. 2-3

How "HAMMOND" Screw-Lift

**SOLVED A DIFFICULT ELEVATING PROBLEM
FOR THE DOUGHNUT CORP. OF AMERICA**



Two of a group of six 9" Screw-Lifts with Screw-Veator feeders handling 1000 cu. ft. per hour of doughnut flour from mixers to St. Regis Valve Bag Packer.

We can do the same for you.

If you have an elevating problem involving any free-flowing bulk material, put it up to "Hammond" Screw-Lifts for a logical solution. We can lift to any practical height eliminating undue handling and carting. The units are built for capacities of 75, 300, 1000 or 2500 cubic feet per hour. They're flexible to fit your conditions — compact — sanitary — dust-tight — moisture-proof. Write for analysis form M-500-2.

Screw Conveyor Corporation
699 HOFFMAN ST. HAMMOND, IND.
ENGINEERS HAMMOND MANUFACTURERS
TRADE MARK REG. U. S. PAT. OFFICE

When inquiring specify CP A3389 — see information request blank, pgs. 2-3



**Central Heating from an Available Steam Source
Eliminates Individual Boilers and Cuts Fuel Costs**

20 years ago a group of Cleveland manufacturers made arrangements to purchase and pipe steam from an available source nearby. By shutting down their own boilers thus dispensing with labor, coal, ash handling and other costs, they realized material savings—one of the largest users paid for his share of the installation costs out of these savings in the first 6 months! . . . Today the originally installed Ric-wil Steam Conduit is still providing these savings and freedom from individual boiler worries . . . A recent survey showed the feasibility of increasing the steam capacity of the boiler plant to serve an adjacent residential and industrial area—at a substantial profit!

Special studies of typical industrial Central Heating projects are available on request.

RIC-WIL INSULATED CONDUIT SYSTEMS
THE RIC-WIL COMPANY - CLEVELAND, OHIO

When inquiring specify CP A3390 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

PRODUCTION

cell system has two central parts. Through the inner cell water flows to cool the mercury arc; the inside compartment of the largest cell is where the material to be reacted is contained. The outer compartment of this cell is used for cooling purposes. Flowing water is an aid to cooling the enclosed burner and avoiding heat transmission to the outer compartment where the material to be activated is flowing or at rest depending on the irradiation technique used. It must be appreciated that the irradiation technique must be worked out by the individual user since there are numerous variables. Included are, variances in the activatability of the sterols, choice of a batch or flowing system of irradiation, number of irradiators in the series system. The equipment referred to here has a capacity of about 4 liters of solution per hour. Usually the irradiation solution consists of 1% sterol in ether. Further information concerning this equipment and its irradiation applications on request.

HANOVIA CHEMICAL & MFG. CO., Dept. CP, Chestnut St. & N. J. R. R. Ave., Newark 5, N. J.

When inquiring specify CP A3391 — see information request blank, pgs. 2-3

Double Cone Blender 8 Feet Diameter Interior Stainless Steel 20% Clad

For uniform blending of powdered gelatin, dry powders, crystals; capacity 152 cu. ft.



Large double-cone blender used in making gelatin

permits rapid cleaning and eliminates danger of contamination.

Description — This portable double-cone blender is eight feet in diameter, with a dry blending capacity of 152 cubic feet. It is powered and constructed to handle a load of 7600 pounds. Well adapted for the mixing of various quantities, the tumbling action of the cone blender provides equality in the mixture of dry products such as the flake and granular form of gelatin. The sturdy construction permits constant operation without shutdowns. The unit which is equipped complete with magnetic starter and pushbutton station, has self-aligned ball bearing pillow blocks mounted on structural steel stands. Additional information concerning double cone blenders on request.

H. K. PORTER & CO., INC., Dept. CP, 1932 Oliver Bldg., Pittsburgh 22, Pa.

When inquiring specify CP A3392 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

FOR PRECISION CONTINUOUS BLENDING OF FLUIDS...

AGAINST PRESSURES UP TO

5,000 LBS./IN²

NEW!



HEAVY-DUTY

Wilson
PULSAFEEDER
Chemical Proportioning Pumps

Designed for the particular needs of industrial process blending of fluids, this new direct-drive Pulsafeeder proportioning pump offers singular advantages. *Hydraulically-balanced diaphragm head isolates piston and cylinder from fluids being pumped, eliminates need for packing glands, prevents contamination of product by pump, lubrication or packing; protects pump from corrosion or attack by fluid being pumped.*

Box-type construction provides sealed-in lubrication, with all moving parts (except motor) running in an oil bath. Rate of flow continuously adjustable while machine is in operation by hand wheel, from zero to full maximum. Largest unit has maximum pumping rate of 800 gallons per hour. Literature and specifications on request. *Process Equipment Division, Lapp Insulator Co., Inc., 100 Maple St., LeRoy, N. Y.*

Lapp *Process Equipment*

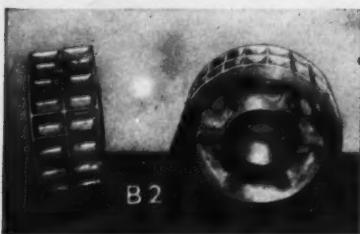
LAPP CHEMICAL PORCELAIN VALVES • PIPE • RASCHIG RINGS...
WILSON PULSAFEEDER CHEMICAL PROPORTIONING PUMPS...

When inquiring specify CP A3393 . . . see information request blank, pgs. 2-3

Manganese Steel is Economical for Many Chemical Plant Equipment Parts

Crushing, grinding, compressing and other processes which wear out parts of ordinary metal prematurely, have led to the adoption of Amsco manganese steel castings for many applications in the chemical industries.

"The toughest steel known" has a work factor over twice that of other alloy cast steels, reducing



the incidence of breakage to a minimum; and it work-hardens under impact or compression, giving it high resistance to abrasive wear.

In numerous chemical plant uses, manganese steel castings have proved economical, by making replacements less frequent,



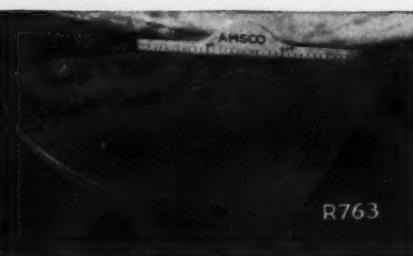
especially where continuous trouble-free operation of equipment is imperative.

The briquette rolls shown in picture B-2, used in chemical and metallurgical plants to compress loose materials into small bricks must have high resistance to compression and abrasion. As each cavity forms thousands of bricks daily, abrasive wear can

be serious. Reorders show that austenitic manganese steel is a "best buy" in the opinion of several users.

Picture C-609 shows an Amsco manganese steel roller made for a chemical plant for use under a tubular kiln. The weight and consequent pressure are heavy, and considerable wearing action is involved. Here, also, Amsco rollers earn their keep.

Picture R-763 presents a manganese steel wearing plate 2" thick and weighing 1,100 lbs., for a masticator. Six of these plates arranged in a circle 10' 8" in diameter with a 3' 7" central hole, constitute a grinding floor for heavy manganese



steel kneading rolls that mix pulverized coal and binder for briquettes. The original installation of plates lasted twelve years and processed 600,000 tons of mixture.

Send for Bulletin No. 543-G which shows other manganese steel parts for a wide range of industries.

Non-magnetic property of manganese steel is discussed in Bulletin 1144-NM.



C-609

When inquiring specify CP A3394 — see information request blank, pgs. 2-3

PRODUCTION

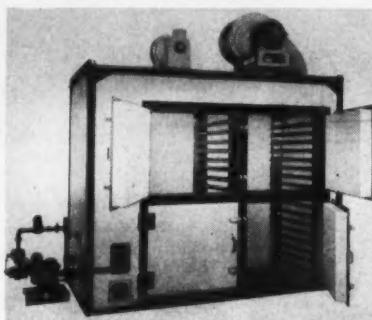
Recirculating Cabinet Oven For Chemicals

Shelf-loading; range 100°-1000° F.

Uses — For baking and drying operations where quick removal of volatiles produced by heating the work and reduction of heat processing time by means of frequent air changes are required. It provides for safe, uniform baking, drying or curing of bulk materials, chemicals or plastics, or objects that may be coated or impregnated with chemicals or coatings; cores, molds; heat treating of metals, from 100°-1000° F.

Features — This type of oven (or dryer) combines the low first cost advantages of an internal heating system with air recirculation in a heat processing chamber that can be made of any desired size with any number of shelves or trays. Complete baking, drying uniformly at fastest possible rate.

Description — The oven is of insulated steel panel construction throughout. Firing



4-door oven; roof circulating fan

into the combustion chamber at the left of the processing oven is a line type gas burner connected to a motor-mix proportioning unit, complete with motor and air-safety control valves, "flameotrol", electrode and spark plug for automatic relighting of the burner. The combustion and heating chambers are separated by a slotted shield. Heat generated by the burner is drawn upward by means of a large recirculating fan mounted on the oven roof, which forces the heated air through a duct into a distributor duct at the right hand side of the oven, whence the air is forced through adjustable side louvers in streams across the full width of the oven, moving uniformly above and below each shelf or tray or work, thence to be drawn through similar slots into the combustion chamber for recirculation. Interlocking in an automatic hook-up gives complete protection. If electric heating is preferred, ribbon heaters may be installed.

W. S. ROCKWELL CO. (Gehnrich Oven Div.), Dept. CP, 50 Church St., New York 7, N. Y.

When inquiring specify CP A3395 — see information request blank, pgs. 2-3

SLY DUST CONTROL

NOT EXPENSIVE...
WIDELY USED!

* This is a typical Sly installation. Hundreds of similar installations are in use in connection with production of cement, crushed stone, agricultural limestone, gypsum, asbestos, talc, feldspar, fluorite, gold, copper and iron ore, diatomaceous earth, bauxite, etc.

Sly Dust Filters collect dust generated in such operations as crushing, grinding, screening, conveying, loading, separating, and mixing. They comply fully with the requirements of the laws and regulations of the various states.

Ask for Bulletin 98. Tell us your problem so that we can write you fully.

THE W. W. SLY MFG. CO.
4754 Train Ave. • Cleveland 2, Ohio



One of many Sly Dust Filters in Cement Plants. These filters are weatherproof and may be located outside.

SLY
PIONEERS
IN SCIENTIFIC
DUST CONTROL

When inquiring specify CP A3396 — see information request blank, pgs. 2-3



**PERISHABLE
TAKE CARE!**

WARD OFF HAND HAZARDS

with Surety SURESEAL SYNTHETIC RUBBER GLOVES

Nature's defenses weren't intended to withstand acids, solvents used in modern industry. Skin protection... complete, comfortable, and work-acceptable... is assured by hard-to-snag, abrasion-resistant Surety Turn-Cuffs. They're made of better synthetic rubber with 14 times service life of natural rubber, other synthetics. Patented design for maximum safety when working in liquids. Turn-Cuff up stops fluids running down arms. Cuff down adds two inches welcome safeguard... Get Surety for SAFETY!

Send for your Surety Glove Selector — takes the guess work out of glove buying. Do it now!

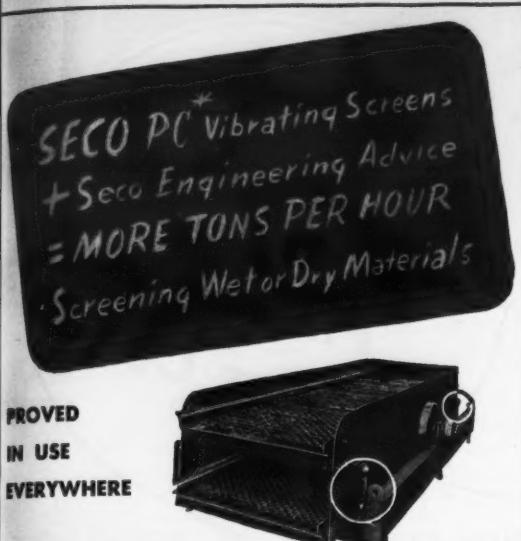


THE Surety RUBBER COMPANY

CARRICKTON, OHIO

When inquiring specify CP A3397 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

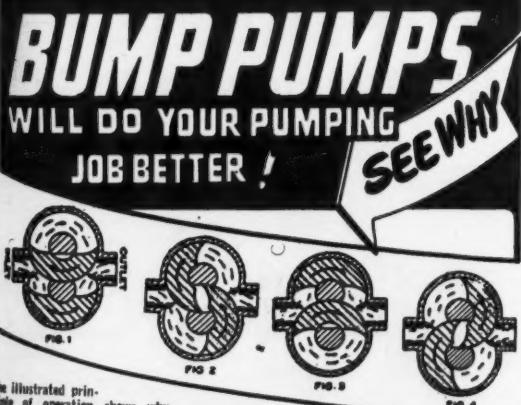


Seco specializes in manufacturing vibrating screens. Our engineers are screening experts. With this background, we have been able to solve a wide variety of chemical screening problems covering an even wider variety of materials. Get a Seco, the screen that gives 100% efficient screening action under all load conditions, plus expert advice in helping you get the right model for your needs. Send us your present or postwar screening problem, today.

Write for Free Catalog Dept. E.

SECO SCREEN EQUIPMENT CO., INC.
9 Lafayette Avenue, Buffalo 13, N.Y.

When inquiring specify CP A3398 — see information request blank, pgs. 2-3



The illustrated principle of operation shows why Bump Industrial Pumps have low maintenance cost. There are no grease cups, and no internal threads — only 2 moving parts, which make them easy to clean and easy to maintain. As one company that has used a large number of Bump Pumps for years states: "They do a better job at a lower total cost to us than any other pump now offered on the market." Bump Industrial Pumps are positive displacement at any speed or pressure . . . self-priming under high vacuums or against head pressures, and deliver a constant volume per revolution, regardless of speed or pressure.

SEND!

The BUMP PUMP CO.
LA CROSSE • WISCONSIN

When inquiring specify CP A3399 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1945

★ DIRECTORY ★ of products in this issue

You will find listed below the names of products and new literature items described in this issue, with page reference on each

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• It isn't so much how handily the Tristand folds up, carries easily and sets up solidly exactly where you need it — it's the workbench convenience you like most. Look now — lots of room for dope pot and oil cans, slots to hang tools, a pipe rest and 3 very useful benders. And whether yoke or chain vise, you get tool-steel LonGrip jaws, easy on polished pipe. For easier work, convenience you'll enjoy — buy it at your Supply House.

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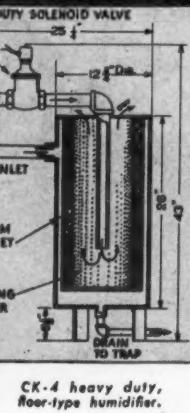
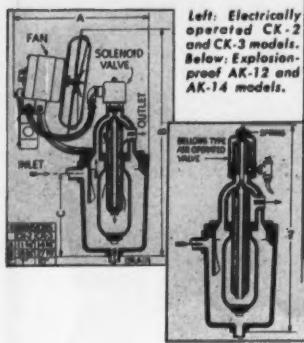
THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U.S.A.

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HOW ARMSTRONG HUMIDIFIERS KEEP RELATIVE HUMIDITY

ABOVE THE DANGER LEVEL



ARMSTRONG STEAM-TYPE HUMIDIFIERS eliminate the deleterious effects of dry air by keeping relative humidity above the danger level. Relative humidity is maintained at a predetermined level automatically, within close limits. Initial cost of these humidifiers is moderate, and operating costs are usually less than 1c per 24 hrs. per 1,000 cu. ft. of space humidified! Capacities to 850 lbs. steam per hour for steam pressures of from 2 to 15 lbs.

For complete information on installation, operating principles, and for all pertinent data, ask for BULLETIN 158. Address: ARMSTRONG MACHINE WORKS, 880 Maple Street, Three Rivers, Michigan.

ARMSTRONG STEAM-TYPE HUMIDIFIERS

Can Do These Things For You

- Eliminate static fires and explosions.
- Eliminate employee colds due to drying out of nasal passages.
- Eliminate drying out of moisture-absorbent materials — loss of quality, weight and strength.
- Simplify dust control problems.

Armstrong
STEAM TRAPS • AIR TRAPS • PURGERS • HUMIDIFIERS

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NON ELECTRIC PERMANENT MAGNETIC SEPARATORS

ERIEZ Non Electric Magnetic Separators clean tramp iron from materials and protect processing machinery . . . eliminate fire hazards . . . the price is much less than the cost of one breakdown. Approved by Mill Mutuals.

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ERIEZ MANUFACTURING COMPANY
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½" to 4" I.P.S.

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½" to 2" I.P.T.

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Tube Sizes

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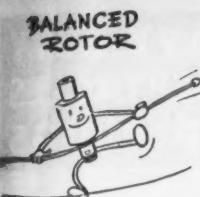
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CHEMICAL PREVIEW



**That's Why Airetool Cleaners
CUT TUBE CLEANING COSTS**

Balanced Rotor-Power Seal—New Form Cutters—these Airetool features make possible lower tube cleaning costs. The BALANCED ROTOR in Airetool's motor, eliminates friction, directs all power against the load—POWER SEAL produces constant torque. Motor can be loaded down to 50 rpm without stalling.

The New Form Cutter eliminates tendency to track and damage tubes—the periphery of the cutter is milled to divide the circumference into teeth of various pitch, which prevents cutter finding same spot in a tube wall during each revolution.

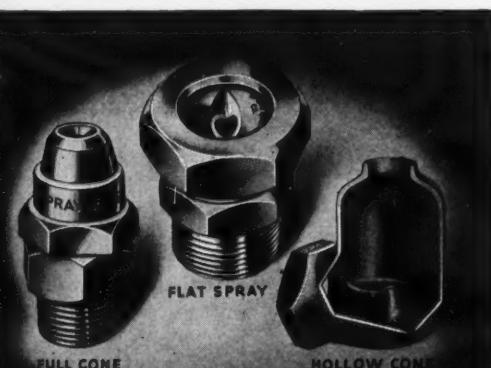


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AIRETOOL MANUFACTURING COMPANY

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NOZZLES**

Write for NOZZLE CATALOG to

SPRAY ENGINEERING CO.

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NOVEMBER-DECEMBER, 1945

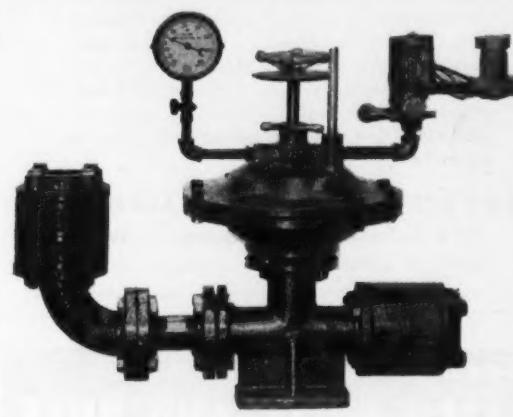
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**Save in Wear
Save in Maintenance**

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Sludges and Slurries
the ODS Diaphragm Way



The OLIVER Diaphragm Slurry Pump is protected against abrasion on all contact parts. Its action, being pulsating and straight through rather than whirling, is less severe on parts than a centrifugal action.

Wear is minimized

The diaphragm is actuated by compressed air, by vacuum or by a combination of both. There is no mechanical linkage to the diaphragm. And the diaphragm has no punchings to weaken it.

Maintenance is low

The pumping of slurries and sludges is not so much a battle against power as against wear and maintenance. The fact that the ODS offers so much in the way of wear resistance and low maintenance is one reason why its popularity and use are spreading so rapidly.

Why not look into the merits of the ODS Pump for handling slurries, sludges or corrosive solutions in your plant? Write for Bulletin 309.

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NOVEMBER-DECEMBER, 1945

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Bark and other waste woods generally burned may soon be efficiently processed for valuable uses. A recently designed interplate grinder using newly developed grinding plates has reduced waste products from mills to valuable fiber form in experimental operations. The product has desirable strength and adapts itself to bonding under pressure in the manufacture of many combination wood plastic board products. (Allis Chalmers, Mfg. Co., Milwaukee, Wis.)

Silicone Rubber In Stocks For Molding & Coating

"Silastic", a family of elastic silicone products, is the latest group of polymeric organo-silicone oxide polymers recently developed into commercial production by Dow Corning Corp. It provides a group of engineering materials which remain elastic and compressible at temperatures of 150° C for long periods and can be used at temperatures up to 250° C for certain applications. "Silastic" covers a series of heat stable oxidation-resistant elastic silicone products characterized by their excellent dielectric properties and chemical resistance. It is furnished compounded, ready for molding, extruding, or coating in several stocks covering a range of physical properties and hardness. (Dow Corning Corp., Midland, Mich.)

No More Sulfur From Sicily

Practically all the sulfur used in America prior to 1900 came from Sicily. The American mines developed after that made future importation unnecessary. (Monsanto Magazine)

Botanical Garden Serves In War & Peace

The New York Botanical Garden now celebrating its fiftieth anniversary contributed immeasurably to the war effort by supplying trained personnel for the production of many essentials among them quinine, insecticides and rubber. It helped train scientists for service in the tropics, furnished seeds and plants for war purposes. One of its major contributions was research on disease inhibiting molds similar to the type from which penicillin is derived. Plants are a boon to health as well as a constant danger. About one third of all human diseases are caused by plants (bacteria). A wealth of interesting data is contained in the booklet "The Significance of Plants in War and Peace." It tells the history of the New York Botanical Garden, describes and illustrates many of its projects. (The New York Botanical Garden, 801 Madison Ave., New York City)

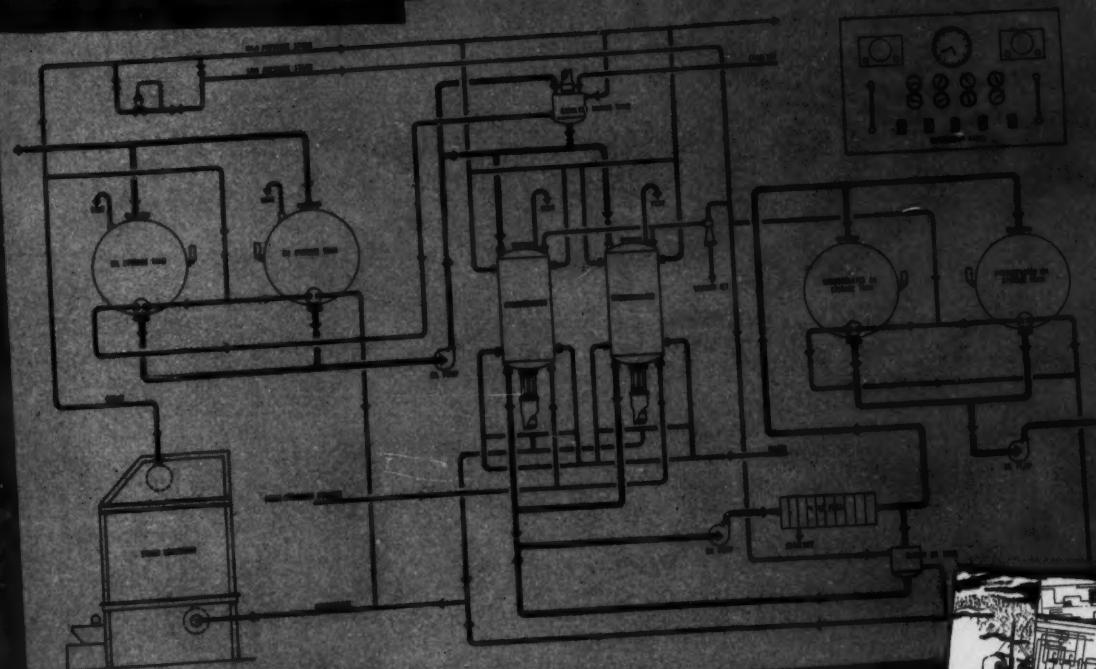
Infrared Barbecue

At a recent meeting of the Pittsburgh Section of the American Ceramic Society guests were entertained at a barbecue which featured the outdoor cooking of a 900 pound steer by infrared methods. The infrared barbecue, utilizing gas thermal radiators to produce a surface heat of 2,300 degrees F. dramatized the versatility of this type of furnace. Only 10 hours was required to cook this 900 pounds of meat — about half the time that utility officials estimated it would take by usual methods.

For more information on product at right, specify CP A2964
see information request blank between pages 2-3.

BLAW-KNOX

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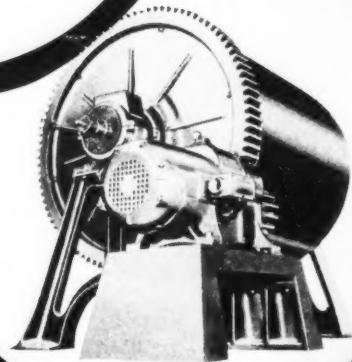
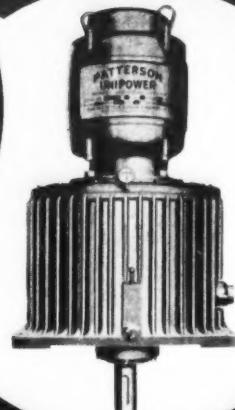
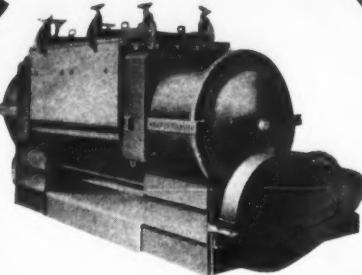
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